THE TIMES
Higher Education
SUPPLEMENT

Lecturer was sacked fairly, says tribunal

by David Jobbins

Sacked West Ham College lecturer and union branch chairman Mr John Regan "flouted authority" and was fairly dismissed, an industrial tribunal has decided.

Mr Regan was suspended by his principal, National Association of Teachers in Further and Higher Education executive member Mr Eric Williams in December 1978. He was accused of "gross misconduct" for failing to fill in new student report forms—and declining to be interviewed about his actions in Mr Williams's office.

Suspension was confirmed by the college governors, who recommended dismissal. Mr Regan was sacked by the London Borough of Newham in April last year.

Lecturers who like Mr Regan favoured action in support of a claim for the merger of the two lowest pay grades took up his case in a bitter internal union dispute which has now lasted for 16 months and shows every sign of continuing.

The industrial tribunal sat on 11 days in October 1979 and in January this year. Its reserved judgment was sent to the parties last week, outlining the unanimous reasons for rejecting Mr Regan's claim that he had been unfairly dismissed.

It referred to background matters which had been brought to its attention and concluded: "His (Mr Regan's) whole pattern of behaviour over a long period of time is one of showing objection to reasonable discipline in a college in which we should have expected a lecturer to exercise reasonable discipline over his pupils.

"His personal ambitions to obtain additional academic qualifications and trade union esteem came to overshadow — indeed swamp — the basic requirements of his duties as a college lecturer.

"He flouted authority by his conduct and, by the exercise of an adroit manoeuvre, avoided being given the warning he apprehended."

The tribunal found there was no trade union dispute, and said Mr Regan was "not amenable" to the authority of his seniors. Mr Williams is said to have acted fairly in suspending him, and the governors acted reasonably in recommending dismissal.

"His (Mr Regan's) conduct was of such a nature that he could no longer be allowed to continue at his place of work. He was determined to go his own way", the decision says.

At next month's NATFHE conference the affair will be revived with a secret session discussion of a motion "deploring" the attempted extension of the definition of gross misconduct brought about by Mr Regan's dismissal. The motion, from Outer London region, calls on the executive to pay Mr Regan's legal costs.

A further motion for public debate seeks a declaration that NATFHE membership should be conditional on adherence to the ACAS code of disciplinary practices and procedures. Moves are also afoot to seek a rule change to preclude principals and vice-principals from NATFHE membership.

Date announced for East Anglia merger

The merger of the University of East Anglia and Keswick Hall College of Education will go ahead in September 1981, following agreement on new proposals by the University Grants Committee.

The two institutions have been told that the UGC had accepted its officers' recommendation to proceed with the merger after almost a year's delay. The original plan to incorporate the college into UEA ran into difficulties as a result of the change two Governments and subsequent financial constraints.

Engineers split over Finniston's plan for national control body

by Robin McKie
Science Correspondent

A major split has appeared between Britain's engineering institutions over their responses to the Finniston Committee's proposal to establish a new Engineering Authority to control the profession in this country.

This week, the Council of the Engineering Institutions, the umbrella group which was set up to represent the general needs of the country's different engineering institutions, published its submission to the Department of Industry on Finniston, opposing his plan for a Government-backed authority.

But at the same time, four major institutions—those of the chemical, the mechanical, the electrical, and the civil engineers—announced they had agreed to a joint submission backing the concept of a single, powerful authority, along the lines suggested by Finniston's committee of inquiry.

Given that these four institutions have a combined membership that makes up more than half that of the CEI, the agreement seriously erodes the council's claimed role as the body representing the general interests of all engineers in Britain.

Previously, two of the institutions—the civils and the mechanicals—had been highly critical of the Finniston plan over its proposals on the make-up of the board of the engineering authority.

However, after several weeks discussion between the institution presidents and their staffs, a general agreement was reached. This proposed a new method for selecting members for the planned Engineering Authority.

Sir Monty Finniston: committee's proposals have divided opinion

Under the new formula, the selection of the authority's 15 members would be the responsibility of the Privy Council, based on nomination lists provided by the institutions and other appropriate bodies.

"We suggest that eight members should be chosen from institution lists, and that they should reflect the four main disciplines of civil, electrical, mechanical and chemical engineering without being mandated by individual organisations", the joint submission to the Department of Industry states. "The remaining seven should be selected to cover employer, academic and public interests".

However, financing of the authority would be carried out by the institutions, not by the Government as Finniston proposes, and control of registration would also be retained.

The plan contrasts markedly with the alternative proposals put forward by the CEI this week. The council suggests that instead of a single authority, three separate bodies be set up to carry out the three different areas of need outlined in the Finniston report. These are:

- The regulation of the engineering profession;
- To act as a voice for the profession;
- To operate as "an engine of change" in shifting national priorities and attitudes to engineering.

"The council recommends that its existing Engineers Registration Board should be developed into a fully representative body broadly along the lines of the General Medical Council to perform the first of the three functions", the CEI document states.

A smaller Government-funded agency would act as a voice for the profession and a third body, or society, would carry out the third role, which is presently controlled by the CEI.

However, in a covering letter accompanying the council's submission, Dr G. S. Hislop points out to the DoI that time did not permit a consensus among all institutions and asks that the department allow more time for a common ground to be found.

Macfarlane calls for industry's support

Mr Neil Macfarlane: "important lessons"

Industry must give greater support to both basic and applied research — a move which would produce immense gains for the private sector, as well as science, the Minister for Science, Mr Neil Macfarlane, told the Annual Chemical Congress in Durham this week.

Mr Macfarlane said several recent reports, including the Finniston recommendations, on altering the engineering profession, the "Technological Change" document prepared by the Advisory Council for Applied Research and Development, and the "Biotechnology" report produced by the Royal Society and other groups, had all assessed Britain's failure to innovate and adapt to new technologies quickly.

"While Britain is a nation rich in creative scientific talent, it has been weak in the commercial realisation of its own science based innovations and in the adoption of innovations originating elsewhere", he added.

Mr Macfarlane told delegates that government support for basic research would also increase by about 5 per cent over the next three years.

"I appreciate that many would like to see faster growth but rigorous restraint of public expenditure is also essential for the country's economic recovery. Science must take a share in that restraint. We have to deal in realism."

Brunel appointment starts row as merger looms

by John O'Leary

A row is developing over the appointment of staff to a new department at Brunel University to be formed after the merger of the university with Shoreditch College, Egham.

Only 14 of the 54 lecturers at Shoreditch have been offered permanent jobs at the university when the merger takes place in September. When the amalgamation was agreed they had expected 37 posts to go to college staff and 20 had later been promised by the university.

Now bitterness among some of the staff has increased with the news that Mr Tom Dodd, the Inner London Education Authority official who represented the college's interests on the appointing panels, has himself been named as second in the new Department of Design Technology at Brunel.

"There is strong feeling that it was unethical to appoint an officer who was in on the interviews when other staff are out in the cold", said a member of the Shoreditch staff this week. "The post was never advertised and people who have not got jobs are really affronted".

Mr Dick Nimmo, administrative secretary at Brunel, said the university was satisfied that there was nothing underhand in the appointment of Mr Dodd, who had known nothing of the possibility of an offer while the interviews for teaching staff were taking place. He had applied unsuccessfully for the job of head of department and the selection board for that post had subsequently decided to appoint a director of studies.

"It was not until they finished all other interviews that the vice-chancellor wrote to Mr Dodd and offered him the job", said Mr Nimmo.

The merger will produce the first university department of design technology which will be based on the present Shoreditch campus. Dr Bernard Myers, head of the design education department at the Royal College of Art, has been chosen as the first professor.

However, Mr R. J. Hunt, chairman of the Conference of Lecturers in Craft and Design Education, has written to the vice-chancellor of Brunel, Dr Stephan Bragg, expressing unease at the small number of Shoreditch staff offered jobs in the new department.

Although 31 Shoreditch staff have been offered jobs next year, 17 of them will be on short-term contracts designed to see out the college's present commitments.

School inspectors review urged

A Scottish teachers union has demanded that inspections in schools and further education colleges be carried out by HM Inspectors who have qualifications, teaching experience and have held posts of responsibility in the subjects under review.

Inspections carried out other than by qualified, experienced HM Inspectors, says the National Association of Schoolmasters/Union of Women Teachers (Scotland), fail to serve any useful education purpose.

The association is urging the Scottish Secretary to ensure that standards of professional control and educational practice of education inspectors are as high as those demanded in Scottish schools.

Several years ago, a parliamentary select committee recommended that inspectors produce written reports on their inspections within particular education authorities and make these available to the public says the association. This practice has now been discontinued. The absence of public control over HM Inspectors is almost complete—but the public have to foot the bill, not merely for the inspectorate but for their studies said NAS/UWT Scottish Secretary, Mr Robert MacClemont.

UGC receives cost warning over Russian

The University Grants Committee's proposals to reduce provision in Russian studies at British universities would cost more, not less money, the British National Association for Soviet and East European Studies claimed this week.

The UGC proposals which have never been made public, recommended the closure of Russian departments at six universities: Aston, Heriot Watt, Strathclyde, Ulster, Aberystwyth and Coleraine, and the phasing out and limitation of expansion at a further 13.

BNASSEES which is an association of specialists in Soviet and East European Area Studies, working mostly in social sciences departments in British universities and polytechnics argues that an analysis of the proposals were provided.

"This is a serious deficiency since a principal justification for the recommendation is that it is a long run they would achieve significant financial savings", BNASSEES says in its reply to the UGC. "Since no redundancies are proposed and capital costs would not be affected any such savings are likely to be minimal or non-existent. The short term extra costs would however be real".

In its partial rejection of the report the association attacks the recommendations for virtually ignoring the important contribution that research has made to British foreign defence, and to commercial policies towards the USSR as well as to public bodies, industry and commerce.

Letter, page 30

NELP head is anti-autonomy

One of the two directors appointed to corporate status for the polytechnics and an end to formal links with local authorities is Mr George Brosan of North East London Polytechnic, it was disclosed this week.

Despite the constraints on staffing demanded by its three participating London boroughs, Dr Brosan expressed "total dismay" at the proposals drawn up at a meeting between polytechnic directors and chairman of polytechnic governors last week.

Such moves to autonomy were disaster for the polytechnics, he said.

"We were all agreed that the polytechnics should maintain their distinctive nature and serve their vocational wealth-producing role", said Dr Brosan. "However the meeting made the assumption that thinking this aim could be achieved by means of polytechnics alone.

The example of the College of Advanced Technology illustrates the "dreadful consequences" of polytechnics acquiring autonomy. Just because there were "difficulties in the polytechnics/local authority relationship did not mean it should be ended.

Dr Brosan's alternative is that the polytechnics and local authorities together should explore the application of a "mutually agreeable" code of conduct.

NEXT WEEK

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John Cruikshank on The Crossman diaries of 1914
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SRC forced to reject priority research ideas

by Robin McKie
Science Correspondent

Potential world-leading research is having to be rejected by Britain's Science Research Council because Government cutbacks have so seriously eroded its funds.

At its last meeting, the council's science board had to turn down 30 per cent of the very best projects for which it was asked to provide money. It was the first time in the SRC's history that it had not given full funding to these applications, which are graded *alpha* by SRC subject committees on the grounds that "their quality is such that they must be supported".

SRC chairman Sir Geoffrey Allen and his colleagues are now extremely worried about this failure properly to provide for first-class research on a stretched budget which was further cut by 6 per cent this year. As one council official put it: "We have cut through the flesh and are now gnawing at the bones of scientific research."

At last month's meetings of the science board, which supports basic research in chemistry, mathematics, physics and biology—a total of 300 *alpha* applications were received, representing a request for about £7,100,000. Between 70 and 80 of these had to be rejected, with only £4,000,000 being committed for university research work.

Apart from the loss of valuable scientific work, the cutback also means that about 60 potential research assistant posts will be lost. A similar level reduction of studentship proposals will be announced at the science board meeting next month. SRC officials believe.

Members of the board are now attempting a delicate juggling act to balance the needs of groups of scientists who have relatively small sums at stake against commitments to large facilities such as the SRC's central near-machine in Rutherford which provides for a community of different scientists. Their major fear is that a first-class but particularly expensive proposal may totally distort the pattern of research support were it to arrive in the near future.

Work backed by the science board is considered to be the seed-corn of British research in general. Their findings are often taken up for development and application by other research councils, such as the Agricultural and Medical research councils, as well the engineering branches of the SRC.

In recent years, it has been particularly strained by science budget cuts and it is three years since it last backed a new project—one that is considered excellent but should only receive money "if funds are available".

Yet in the past, science board grants have funded the early work of several Nobel prize-winners including chemists such as Sir Derek Barton and Professor Geoffrey Wilkinson.

It is now feared that Britain's lead in many areas of scientific endeavour could be lost and that our capacity for technological innovation, upon which our future industrial strength will be based, will also be eroded.

It is this argument that the SRC will present before the Advisory Board for the Research Councils in the next few months in an attempt to halt the decline in its support for first-class basic research.

ILEA reform plan angers Socialists

A proposal to reform—but not to abolish—the Inner London Education Authority is almost certain to be included in the Government's programme in the next Queen's Speech.

It is likely to take the form of a plan to create a joint education committee among the 12 inner London boroughs and the City of London, which would take over from ILEA. The present authority is a committee of the Greater London Council made up of the GLC members for Inner London and one representative from each inner London borough.

Mr Mark Carlisle, Secretary of State for Education, and Mr Michael Heseltine, the Environment Secretary, cannot ignore entirely the strong wish among London Conservatives to abolish the ILEA, a Labour stronghold. But nor can they ignore the very strong opposition that this proposal has evoked from all sections of the community.

The Baker report produced at the request of the Secretary of State by a group of London Conservatives chaired by Mr Kenneth Baker, MP, recommended the break-up of the authority and the return of education powers to the individual boroughs. It also proposed splitting further and higher education and administering five inner London polytechnics through a joint education committee of the 12 boroughs.

The virtues of the joint education committee plan are seen by DES officials as greater accountability and greater scrutiny.

ILEA's education officer, Mr Peter Newsam, said that they had received no information from either the DES or from the Secretary of State on any such plan. "We accept the Secretary of State's assurances in the House that he is still considering the matter."

Sir Ashley Bramall, the ILEA's Labour leader, described any proposals for a joint education committee as disastrous.

He said: "It is a prescription for leaving the running of education to non-elected officers. It would result in a totally structureless system of education in Inner London. We would be at risk.

Scots strike over Clegg

by Olga Wojtas

The Clegg report has been virtually ignored in Scotland, its Scottish lecturers have been threatened by tactical further education union groups and there have been widespread work-to-rule and strike action.

The stage is become months of negotiation have produced a six paragraph, for Scottish teachers, almost identical to that to carry out their own separate pay review.

Clegg has advised that Scottish colleagues accept the figures for England and Wales and translate them into Scottish terms or work from the average increase and translate the English pay structure. The Scottish pay structure. The Scottish union anger has been provoked because the commission has ignored the fact that there are two negotiating bodies in Scotland: the Scottish Teachers Salaries Committee for primary and secondary teachers and the Lecturers in Further Education Colleges Joint Negotiating Committee for colleges of education and the Central Institutions Academic Staff Salaries Committee, and has addressed only the former.

Mr Robin Robertson, chairman of the Association of Lecturers in Colleges of Education said: "The timing is very ill-judged and gravely disconcerting."

The Clegg commission this week suggested that its study of university lecturers' pay should take longer than planned. It was expected that the study, originally projected to end in the late summer, would take longer than anticipated. The commission may now be thinking of early 1981 for its report.

Talks were taking place this week between the commission and the Association of University Teachers about the process of bringing to a close the AUT's suspended 16 per cent claim, which has already been judged. The Clegg recommendations would be phased with half payable from January 1 and the rest from September 1. Lecturers have already been receiving 7.5 per cent from January 1, so decisions when Clegg looked to come up with an interim report on Christmas and this will be subsumed by the new award.

The management side was reserving comments on the recommendations until its final meeting on Thursday. But Mr Peter Dawson, general secretary of the National Association of Teachers in Further and Higher Education, was confident the award would be implemented.

He pointed out that the increases were a Government decision. This year's three fifths, the size of the full increase, is in addition to 10 per cent from last October.

Union leaders and employers were meeting today to discuss the Clegg recommendations for colleges and polytechnic lecturers for increases ranging from 17 per cent to 27 per cent. Clegg proposals would add 12.5 per cent or £1000 to the further education salary bill.

The report is not binding on either side, but indications were that the employers would agree to implement the findings and have short strength for a local strike on the 1980 claim, which has already been lodged. The Clegg recommendations would be phased with half payable from January 1 and the rest from September 1. Lecturers have already been receiving 7.5 per cent from January 1, so decisions when Clegg looked to come up with an interim report at Christmas and this will be subsumed by the new award.

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University staff must wait

by David Jobbins

offer the Burnham management panel was willing to make. However we have to recognise we have not entirely made up the ground lost since Houghton.

Talks began later this month on the 1980 claim. "Last April we got an award which was well below the Clegg rate. We have now again awarded a figure which partially rectifies the position of the last two awards and the three before that.

"We are now seeking a 1980 award which is in line with settlements generally and has regard to the relativities Houghton fixed.

The Association of Polytechnic Teachers said that although the recommendations were not as much as hoped, they were more than Naffhe had asked for.

A renewed row has broken out over the Clegg study of university academics' salaries. Union leaders have protested at a further delay; they say may be caused by a request from the Office of Manpower Economics to the employers for information on supply and demand and trends in recruitment.

They are angered that they were not consulted and say that it complicates the eventual interpretation of the commission's findings.

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NASA © SPACE SHUTTLE

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Clegg restores 1974 levels for lower paid

by David Jobbins

Pay rises recommended for polytechnic and college lecturers by the Clegg Commission range from 17 per cent on the lowest scales to 25 per cent on the highest.

The director of one of the larger polytechnics will—if the report is implemented—receive a pay boost greater than the proposed new annual minimum salary for a Lecturer 1 of £4,071 from September 1, when the second half of the award would be payable.

But it is at the bottom end of the pay scales—despite the lower percentage increases—that most has been done to restore the 1974 Houghton levels. A Lecturer 1 on the minimum salary is in fact better off than if the Houghton relativities had simply been restored, while a Lecturer 2 at the bottom of that scale is only marginally worse off.

Higher up the career structure the tale shows how, even with the Clegg awards, senior staff have slipped behind the Houghton levels.

The report says the "modest" widening of differentials it proposed for school teachers is equally justified in higher education. In particular the value of company cars in the private sector, which the report says are relatively common at salaries of £10,000, was one of the factors the commission took into account in boosting higher salaries.

The commission was forced to abandon the £80,000 management consultants' study on which it pinned hopes of basing a factorial comparison between teaching jobs and a wide range of occupations outside the profession. By Christmas, when the commission admitted it was unable to issue an interim report to help with the January phase of payments, consideration was being given to discounting the results.

Professor Clegg described this as the "big one that got away". The commission acknowledged the risks of failure when it embarked on the exercise but he had "no apologies" for trying. The report admits that to do the job properly would take 18 months at least.

Because of the limited time available, and the relatively small sample size, the data revealed a great contrast between the increases for school teachers and other teachers, many of whom seemed in line for pay cuts.

Unhappily, when we got the results we found they could not form the basis of a report," Professor Clegg said this week.

Rather than leave the teachers and the education service in the lurch by abandoning the whole task, the commission then turned to another method for determining pay by comparing the salaries of graduate entrees to teaching with those of entrants to other occupations. The commission also examined the rate at which graduate teachers were promoted—again in comparison with graduates in other occupations.

Professor Clegg: 'job not perfect'

"I cannot say we think we have done a perfect job of work but in the circumstances, given the difficulties we were facing, we have done as well as we can to produce a report which is fair to teachers—and to the rest of the population which has to meet the bill," Professor Clegg said.

One thing the commission did identify for further consideration by the unions and teachers' employers was the salary structure, which it considered puzzling and not the best which could be devised.

The report says: "We are not convinced a single salary structure can at the same time provide a fair and effective system of rewards, promotion and differentiate within individual colleges and also make proper allowance for the wide range of work . . . in further education."

Professor Clegg added: "We are not in a position to say it should be reformed . . . but we are in a position to say in both sides that they should be at least considered."

Two further recommendations from the commission are:

● Part-time staff should be paid pro-rata with full-time staff.

● Salaries and conditions of research workers in further education should be negotiated along with teaching staff.

The Standing Commission on Pay Comparability, 1 Report No. 7, Teachers, HMSO Command 7830, £2.75.

Scale		Rate of 1 April 1979	Proposed rate	Proposed percentage increase	Index of proposed rates (Burnham Houghton Report = 100) (a)
		£pa	£pa	%	
Lecturer I	Min.	3,480	4,071	17.0	109
	Max.	5,814(b)	6,801(b)	17.0(b)	93(b)
Lecturer II	Min.	4,470	5,229	17.0	98
	Max.	7,149	8,436	18.0	94
Senior Lecturer	Min.	6,597	7,785	18.0	92
	Max.	8,253	9,822	19.0	90
Principal Lecturer or Reader	Min.	7,680	9,138	19.0	91
	Max.	9,639	11,568	20.0	90
Head of Department					
I	Min.	6,435	7,593	18.0	93
	Max.	7,338	8,658	18.0	91
II	Min.	7,338	8,733	19.0	92
	Max.	8,283	9,858	19.0	90
III	Min.	8,031	9,558	19.0	91
	Max.	9,576	10,680	19.0	90
IV	Min.	8,655	10,386	20.0	91
	Max.	9,702	11,643	20.0	90
V	Min.	9,420	11,304	20.0	90
	Max.	10,467	12,561	20.0	89
VI	Min.	10,185	12,222	20.0	89
	Max.	11,232	13,479	20.0	88
Vice Principal					
1	Min.	7,155	8,514	19.0	92
	Max.	7,737	9,207	19.0	91
2	Min.	7,845	9,336	19.0	91
	Max.	8,424	10,026	19.0	90
3	Min.	8,589	10,221	19.0	90
	Max.	9,168	10,911	19.0	89
4	Min.	9,342	11,211	20.0	90
	Max.	9,921	11,904	20.0	89
5	Min.	10,071	12,084	20.0	89
	Max.	10,653	12,783	20.0	89
6	Min.	10,794	12,882	20.0	89
	Max.	11,316	13,578	20.0	88
7	Min.	11,340	13,722	21.0	89
	Max.	11,916	14,418	21.0	89
8	Min.	11,967	14,481	21.0	89
	Max.	12,477	15,096	21.0	88
9	Min.	12,489	15,237	22.0	88
	Max.	12,999	15,858	22.0	88
10	Min.	13,008	15,870	22.0	88
	Max.	13,518	16,491	22.0	87
11	Min.	13,530	16,506	22.0	87
	Max.	14,040	17,130	22.0	86
12	Min.	14,052	17,143	22.0	86
	Max.	14,562	17,765	22.0	86
Principal					
1	Min.	8,400	9,996	19.0	90
	Max.	9,093	10,821	19.0	89
2	Min.	9,222	11,067	20.0	90
	Max.	9,915	11,898	20.0	89
3	Min.	10,110	12,132	20.0	89
	Max.	10,815	12,978	20.0	89
4	Min.	11,022	13,338	21.0	89
	Max.	11,715	14,175	21.0	89
5	Min.	11,886	14,382	21.0	89
	Max.	12,495	15,120	21.0	88
6	Min.	12,585	15,354	22.0	88
	Max.	13,194	16,098	22.0	87
7	Min.	13,194	16,125	22.0	87
	Max.	13,218	16,155	22.0	87
8	Min.	13,827	16,869	22.0	87
	Max.	13,890	16,947	22.0	87
9	Min.	14,499	17,688	22.0	86
	Max.	14,562	17,765	22.0	86

(a) Average non-manual earnings are estimated to have risen by 300.6 per cent between late May 1974 and April 1979. This estimate is derived mainly from the New Earnings Survey's index of average earnings of non-manual men and women (excluding teachers).

(b) Excludes additional payment of £5,998 (proposed from September 1979). Notes: See text at end of Table 3.

Proposed FE teachers salary scales for England and Wales.

OU student ridiculed on Platform 1

by Charlotte Barry

Extensive apathy, indifference, outright discouragement exist by counselling staff at the Open University is inhibiting students from enrolling in the distinction course in technology.

Yet the stated policy of the technology faculty is to encourage students, particularly women, who are not specialists in this area, is revealed in a survey carried out by a senior assistant counsellor, the university's Yorkshire region.

The survey of 116 women at a summer school in 1978 out of a total of 14 per cent on the technology courses shows that advice from [illegible] (mainly men) was the least important reason for choosing the course, with only 12 claiming to have had any positive encouragement.

"Misinformation, acceptance of role stereotypes, sexist chauvinism, were to be found among some counsellors from all faculties," reports Ms Ailsa Swarbrick in the April edition of the OU house journal *Teaching at Distance*.

Northamptonshire, but the open ended answers and the interviews revealed extensive apathy, indifference and outright discouragement towards women students both at applicant counselling and educational registration meetings.

Although the proportion of women students in the Open University overall had increased steadily to 44 per cent in 1978, numbers for courses in mathematics, science and especially technology have continued to be low.

However, Ms Swarbrick's survey shows that the success rate of the small number of women who become the initial barriers had enrolled on the technology course to vary significantly from the overall average. More than 22 per cent of the women passed, with 14 per cent gaining a distinction.

In spite of problems with accuracy, lack of scientific background, new unfamiliar subject matter and the perceived difficulty of being a predominantly male study group the woman positively welcomed the chance of the new discipline and found the content and approach stimulating.

About 60 per cent said the choice of course had met their anticipation, "scoffing" or "fear" expressed by a range of people including members of the academic staff, professional engineers, members of the women's movement and a British Rail station manager who indicated a student's stay reading course material was resulting for a time.

But only 13 per cent reported their tutor-counsellors as positively discouraging once they had registered for the course. The central problem, to their removal and extra support and enthusiasm for the course.

The report recommends that the results of the survey should be used to encourage more women and encourages the providing and training of part-time staff in the regions.

Poly aims to help young offenders

A major study of Youth Opportunity Programmes, directed at easing young offenders who would otherwise receive custodial sentences is under way at the Polytechnic of the South Bank.

The Manpower Services Commission has allocated £30,000 to Mr David Trisman of the department of social sciences to evaluate the success of a series of schemes organized by the National Association for the Care and Resettlement of Offenders and compare them with the "normal population".

The schemes run by NACRO are funded by the Special Programmes Division of the MSC and the Home Office (Probation and Prison services) has shown a strong interest in the project.

In essence it is hoped to demonstrate that viable alternatives to prison and Borstal could be achieved through programmes that founded work training and educational and social support for young offenders.

A research advisory committee has been established which includes representatives of the MSC, Home Office and in addition Dr Mel Chertkoff of Illinois University, who is to visit the project in June, and Dr Gino Newman, head of the department of social sciences at the polytechnic.

Centre 'needs managerial influence'

by Robin McKie
Science Correspondent

There is a strong case for the first director of the newly established Centre for Analysis of Technological Change to be a management scientist. This view has been made by Mr Philip Hand, director of the foundation for management education, who this week pointed out that industry is represented on the major interface between basic research and its technological outcomes by engineers.

"However, it is often very hard to get industry to take up new ideas because the very structure of companies makes such innovation extremely difficult to introduce" he said.

Communication between academics and industrial scientists is often difficult, engineers in universities have not research establishments and, in much industry, they commence their work never really take off in the way that it had in the United States and West Germany.

"It is quite true that we have been very good at producing innovative ideas but have never been very good at bringing them to our advantage on an industrial scale. We may have discovered penicillin but it was America that manufactured it," Mr Hand said.

The new centre, which is being funded by the Leverhulme Trust, the Science and Social Science research councils, should therefore include not only scientists and economists but managers and management scientists who were directly experienced in bringing the technical and business worlds together.

"The management aspects for technical change have got to be seen and understood," Mr Hand said.

One sensible way to do this would be to appoint as the first director of CATCH—which is being set up by Manpower Services Commission policy on the use of resources, technological change and scientific development—someone who is a manager or a management scientist.

If this was not considered a correct move an alternative would be to set up the centre as a university unit but with a strong management school to ensure at least some managerial influence in its operation.

Why breakfast TV is a good idea

Breakfast time television, with emphasis on news and current affairs, is advocated by Professor Alan Thompson, professor of the economics of government at Heriot-Watt University.

Giving a public lecture this week on "Freedom and responsibility in broadcasting", Professor Thompson, a former BBC national governor for Scotland and MP, said the BBC was acknowledged to be the best broadcasting system in the world.

He would be strongly in the Dick Taylor tradition, licence fee, service, but survival is achieved by being [illegible] to risk, after half the century, such survival.

Professor Thompson said the success of the American commercial broadcasting system, the more added existed for journalists, actors, entertainers, writers and politicians. Competition not only increased employment, it also encouraged creative freedom and innovation, said Professor Thompson.

"Breakfast television would not lessen now talents, new forces and new ways of doing things, it could provide more jobs rather than more overtime for existing talents. In America, nearly 70 per cent of viewers watch television with breakfast cornflakes. The news coverage is lively and topical, and I think no doubt that we could do as well, if not better, in this country," he said.

Leeds explores China links

A delegation from Leeds University is to visit China to assess the possibility of establishing academic links with Fudan University in Shanghai, and to explore the possibility of establishing a student exchange programme.

The visit will last two weeks and delegates will also see Peking and make contact with other institutions in China. The idea stems from Mr Shirley Williams's visit to Leeds last year and the Chinese proposed links with British universities.

NUS president warns against 'moneygrabbing jackals'

The long and the short of it for a hot week on the Blackpool platform.

by Paul Flather

The National Union of Students has not and will not accept the Government's new proposal to fund student unions through college budgets, Mr Trevor Phillips said in his opening speech at the union's national conference in Blackpool this week. The outgoing president warned the 800 delegates and 500 observers in the Winter Gardens hall that students would be one of a number of groups picked on by Mrs Thatcher's "mad moneygrabbing jackals".

The new system planned by Mr Mark Carlisle, the Secretary of State for Education, would open student unions to unbridled interference by college principals and vice-chancellors and further squeezes on their already limited resources. But in order to fight back, which students had to do, the NUS needed to make realistic decisions on finance and on the union's future priorities.

"Each and every one of you has to make painful choices about where your money goes next year. But you will make them because you have no alternative as responsible union officers", he said. The union's income from subscriptions would be reduced by up to £100,000 in the next year because of piecemeal decisions in past years, inflation and falling income.

He went on to attack the Conservative Government's record on higher education and repeated earlier warnings that students would go out the offensive with boycotts and rent strikes in colleges where charges were increased more than the 14.7 per cent increase in grants announced for next year. The protests were almost inevitable because of the low increase in grants and because demands to abolish the means test had met with sympathy but little action.

Mr Phillips defended the union from attacks from both the left and right flanks. He called for a broadly based union with no one political group holding a "stranglehold" on the NUS. "The union is no longer a vehicle for the views of a particular political party. It is not just a platform for those of us who want to engage in struggle against racialism or any other injustice."

A new system of student union subscriptions which shifts the burden of payment away from the larger universities was approved by the conference in a mood last described as "enforced consensus". Subscriptions had been discussed at the last four NUS conferences and delegates faced the option of approving the main motion or having no subscriptions at all.

The new system to be phased in over the next academic year spreads the burden of meeting the union's income of £850,000 more equitably over the 750 student unions in NUS. It will mean a drop of about 9 per cent in NUS's total income. University unions can now expect to pay about 3 per cent less to NUS. But middle range colleges will not face increases of more than 15 per cent in their subscription.

At present 40 large universities and polytechnics make up more than half the union's annual income.

Ms Helen Connor reelected for a second year as national treasurer, said:

"There was no debate because we were left with no option. You just had to vote, otherwise there would have been no union. But it keeps us on an even keel for the next two years."

Expansive authority launches 'Lets Learn' campaign

by Charlotte Barry

Manchester local education authority is preparing to expand its adult education provision and is making an all-out attempt to encourage more members of the public to enrol for heavily subsidized full or part-time courses in the autumn.

Next week it is launching an intensive week of campaigning with the slogan "Lets Learn", aimed at making more than 450,000 Mancunians aware of one of the most comprehensive ranges of adult study offered anywhere in Britain.

As open work in colleges and adult education centres will employ some Manchester's role as one of the only authorities in Britain which is maintaining a substantial subsidy, and is even considering growth in the field of community education.

At the moment only about 27,000 people, representing about 6 per cent of the adult population, take up adult education and the small proportion is worrying the authority.

"We are trying to help the interesting problem of people who are unemployed or have some time on their hands," said Councillor Frank Dole, chairman of the local education authority.

Manchester's community education programme, which embraces the youth and career services as well as adult education, only suffered a part time cutback in the last year and its subsidy remains at about £5m. Education spending overall was cut by about 5 per cent.

Next year it will be offering some of the cheapest part-time courses in Britain, following a change in the fee structure. Each full year course will cost £10, or 30p per session. Concessions remain at £3 or 10p respectively for pensioners and unemployed, and those suffering financial hardship will not be charged at all.

In Manchester's six neighbouring authorities a full year's course will cost a minimum of £40. In Cheshire and Trafford, where fees have been increased by more than 100 per cent and a number of courses axed, adult education is being organized on a self-financing basis, and there has been a big drop in enrolments.

So far, with only a handful of universities still to make their decisions known, only three will charge more than the minimum, Bradford, and Brunel will charge £2,400 for courses on non-laboratory-based overseas students, and £3,500 for science students. The University of Manchester Institute of Science and Technology will charge £2,500 and £3,500 respectively.

Oxford will vote this term as to whether to charge overseas state students £200 above the UGC recommended fee.

CNAA approves science degrees

Indefinite approval for honours degrees have been given by the Council for National Academic Awards in a major step forward in the field of community education.

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Overseas students will pay minimum fees

The majority of universities will charge overseas students the minimum fees recommended by the University Grants Committee, in 1980-81.

According to information collected by the Committee of Vice-Chancellors and Principals, most will charge £2,000 for arts students, £3,000 for science and £5,000 for medicine and allied subjects. In some cases, where subjects are taught in the arts and sciences, courses will demand an instructor they are laboratory based.

Finniston proposals win vice-chancellors' support

by Robin McKie
Science Correspondent

University vice-chancellors have greeted the Finniston report's proposals for radically reorganizing engineering education and the structure of the profession in Britain with a statement of broad approval and support.

In particular the Committee of Vice-Chancellors and Principals believes the proposed Engineering Authority should have powers to accredit university courses, monitor courses, monitor employers' training programmes and run the register of practicing engineers.

"There is no doubt that the major changes which will take place in both the education and the training of engineers will be greatly in the country's benefit", the CVCP submission to the Department of Industry states.

However, the financial implications of the Finniston plan should be underestimated, the committee warns, particularly those concerned with funding the recommended new degrees of BEng and MEng.

"This will necessarily entail extra support for the universities and it should be ensured that funding is sufficient to allow the maintenance of high standards for all departments, whether or not they are able to offer MEng courses".

The vice-chancellors also express concern about the Finniston recommendation that the new authority be funded directly by Government. The body should be independent, they state, and should be drawn from industry, the professional institutions and the universities.

Other reservations highlighted by the committee include:

● disagreement that the selection for the four-year MEng course should be made after a common first year with the BEng. This would be unreliable, would discriminate against late-developers and instead should be carried out after two years;

● opposition to earmarking University Grants Committee funds for accredited courses. This should only be done for new courses over a limited period;

● rejection of the need to give engineering students greater grants than others. "There are other ways of attracting good students into engineering", the CVCP states.

The committee also opposes extra payment for academics with industrial experience although it does welcome the Finniston recommendation for encouraging university links with industry.

Student myths come in for revision

The notion that the successful student has a regular schedule of study, works for short periods with frequent rest breaks, reviews notes soon after a lecture and does not leave work to the last minute is a myth.

This is the finding of Mr Alex Main of Strathclyde University's centre for educational practice, published this week in his book, *Encouraging Effective Learning*.

Successful students, he says, are more likely to choose personal and idiosyncratic methods of study than those based on a textbook, and their success is more likely to stem from their attitudes, motivation and personal attributes than "good" study methods.

Of 5,000 new undergraduates questioned since 1976 Mr Main has found:

● Almost half were easily distracted when studying and lost interest when things got too difficult.

● 40 per cent had no regular schedule of work.

● 30 per cent tended to put off work until the last minute and needed the stimulus of exams to make them study.

A smaller, more intensive study of practical engineering students reinforced these findings, with less than 20 per cent managing their study time efficiently or coping well with deadlines.

Mr Main found no direct relationship between the study habits and the failure rate of first-year students. But a significant minority admitted to having serious study difficulties such as organization of time, concentration, motivation, reading speed, ability to recall, and anxiety about examinations.

Mr Main, explaining in detail a number of counselling techniques which can be used to resolve these difficulties and how they can be applied effectively by the sympathetic teacher of the student, *Encouraging Effective Learning*, Scottish Academic Press, £3.25.

College must prove itself

The Open College has made a significant number of breakthroughs although it has still to prove itself as an alternative to A levels, Mr Keith Percy, organizing tutor for extra-mural studies at Lancaster University, told the Open College conference at Lancaster this week.

Mr Percy is director of a research project funded by the Council for Educational Technology which has monitored the progress of the adult learning scheme.

Although the Open College was still in its initial stages and made of its students had got beyond the first year of higher education the signs were favourable, Mr Percy said. The college seemed to be providing an enjoyable, flexible and informal learning experience that helped to develop the confidence of its students, most of whom had left school before the age of 17.

The Open College Federation of the North-West was launched five years ago by Nelson and Colne College, the University of Lancaster and Preston Polytechnic.

Micro-chip triggers book conference

The problems of the introduction of micro-chip technology into education and the effects of scarce resources on book-buying are to be explored at a conference in July organized by the National Book League.

The conference, entitled "Why Should Students Read?", will bring together publishers, booksellers, librarians and students with the aim of considering the best use that can make of books by students. It will be held at Warwick University from July 3 to 5.

New school concentrates on languages

A European Business School aiming to produce British international managers with strong linguistic abilities was launched this week at City University.

EBS in London will be the third in a network of centres of higher education already operating in Paris and Frankfurt where they have a joint intake of 750 students.

Director Mr Peter Coen said: "At a time when there is an open debate about the functioning of the EEC and a possible British withdrawal from the community, the launch of the London centre with the full support of our French and German counterparts is an indication of what can be achieved with a firm commitment to the principle of joint development within Europe."

The school will open this October using the facilities of the university. Initially it does not intend to take more than 15 to 20 students, paying a fee of £1,100 a year, but it has capacity for three times that number.

It is to offer a four-year undergraduate programme which will combine an integrated course in business and languages, work and study in all three centres and practical experience in industry.

At first the school's diploma will be internally validated from Frankfurt, but it is hoped eventually to obtain recognition from a university or validation through the Council for National Academic Awards which has already expressed interest in the course.

Prospective students are expected to have normal university entrance requirements but in addition they will sit an entrance examination next month. This will test their ability in mathematics but especially their fluency in one or two foreign languages.

For the moment the school is to be privately financed but efforts are being made to attract industry support and eventually government funds.

Industry 'must be attractive'

Industry must take more responsibility for attracting graduates into jobs, Dr Rhodes Boyson, under-secretary of state for education, told the Institute of Careers Officers in Birmingham this week.

Dr Boyson said that the last 20 years had seen a growing emphasis on public administration and the public services and correspondingly less on production. "The Government was now committed to altering this balance."

The higher education system can help to break down this barrier, but industry, too, has a role to play "be attracted.

Dr Boyson said that industry the wealth-creating sector of economy needed more engineers and scientists. This it must ensure that it offered existing and intending engineering graduate employees attractive conditions and prospects.

Commending the polytechnics for activing direct links with industry, business and the professions or laid out in the 1966 White Paper, Dr Boyson said he was looking to them to build on this achievement and to strengthen their vocational and industrial commitment.

"I believe the major role of the polytechnics remains, and must remain, to provide high-quality education and training for people about to enter or already working in the wide range of careers available in industry, technologically based society", he said.

Four-year course 'is solution to falling student numbers'

by Rohini McKie
Science Correspondent

Four-year courses in many university subjects should be introduced by about 1985 to take advantage of the expected decline in student numbers in the early years of the next decade, the Annual Chemical Congress at Durham University heard last week.

Professor H. M. Frey, head of Reading University chemistry department, said that if half the students presently taking three-year degrees, took an extra year to study more advanced, specialist courses, this would cause a 15 per cent rise in numbers.

"If only half the courses adopted this measure, which is a more realistic estimate, then university numbers would rise by 8 per cent —an increase which would require no new building expenditure, a major component of university costs", he added.

Such a move should be deferred until 1985-86, however, so the resulting increase in students, which would begin three years later, would coincide with the predicted drop in those expected to enter higher education.

Professor Frey said there were several reasons for introducing four year courses. In the case of chemistry, alterations in school syllabi and pressures for increased knowledge to be imparted at universities were major factors on the road to change.

Although the proposals for introducing N and F level exams at schools had been dropped by this Government, it was possible they could be reintroduced by a different administration. This would have serious consequences for three-year degree courses.

"Even with the present A level system, students at universities are having to be taught things they should have learned at school. This applies not only to learning but also to manipulative and practical work as well."

Also changes in chemistry were forcing alterations in attitudes at universities. For instance, constant technological advances were overloading teaching programmes, sometimes at the expense of instructing in fundamentals. Students also had to find more and more holiday work to survive financial difficulties, leaving less time for study, and there was further pressure for them to increase their practical work.

The best solution would be to introduce a four-year honours degree, Professor Frey argued. There would be a common three years for all students leading to an ordinary degree, with the best 50 per cent then staying on to do a fourth-year honours.

This would allow more time for practical and research work, specialization, learning of communication and literacy skills and would also improve morale among staff who would be dealing with brighter and more committed students.

Drastic remedies proposed for stagnation crisis

A package of radical proposals—including one for moving some science lecturers out of universities into schools—was put to the Congress last week as a cure for the itself stagnation crisis that now affects higher education in Britain.

Professor B. G. Gowenlock, head of Heriot-Watt University's chemistry department, said chemistry had suffered severe contractions in recent years and that in the period 1972-76, a total of 100 posts had been frozen because of financial difficulties affecting universities.

Chemistry departments had also suffered because the proportion of staff under 40 years was lower than the average for lecturers—36 per cent compared with the general figure of 47.3 per cent.

To allow greater flexibility and more opportunities for bright young scientists to enter departments with invigorating new ideas, Professor Gowenlock proposed a package of different proposals.

These recommendations included:

- Early retirement—although this could be costly and have minimal effects;
- Phased redeployment. "Would it be possible to have an arrangement whereby staff were seconded to secondary education?" Professor Gowenlock asked;
- Joint university — industry appointments for staff under 35;
- Extension of present Science Research Council encouragement for creating staff vacancies.

However, Professor Gowenlock warned that these moves would require either more new funding of science or a reallocation of existing funds.

"There may be problems in such proposals. It is my belief that to do nothing will be even more painful", he concluded.

Chemists stress need for joint approach

It is vital that engineers and scientists should not be separated over registration issues if the new Engineering Authority is set up as proposed by the Finniston Committee, the Royal Institute of Chemistry has warned in a submission to the Department of Industry.

The document, which was revealed at the Congress, points out that "both scientists and engineers can be technologists and their contributions are complementary and of equal importance".

It adds that the term "engineering" describes the application of scientific knowledge to practical ends—which covers the work of a chemist or physicist as much as a mechanical or chemical engineer.

"Indeed, all four groups would be referred to as engineers in any European country other than the United Kingdom", the submission states.

Natfhe calls for stoppage on May 14

Polytechnic and college lecturers are being asked to stop work on the TUC's day of action on May 14.

The National Association of Teachers in Further and Higher Education has told its 70,000 members to hold branch meetings when term begins, to consider precisely what action to take.

The union has circulated a draft resolution to branches for debate. It expresses full support for the TUC demonstration and lists government policies — and includes a request to the union national executive to authorise a withdrawal of labour.

Under Natfhe rules, industrial action on those lines can only be made official by the national executive if more than half all members in a branch support it.

The point to which lectures take place—and the form it takes—obviously cannot be known until branches have met.

But general secretary Mr Peter Dawson has stressed the importance attached by the executive to the May 14 demonstrations, and told branches that they should "signal Natfhe to take industrial action.

Government policies were having devastating" effects on further, higher, and adult education, he said. A demonstration of united opposition to the government's education policy was important.

The union has been involved in talks with the TUC over the issue of lecturers involved in public examinations on May 14. The TUC general council has advised unions to have regard to maintenance of essential services and NATFHE believes its position falls into this category.

The Association of University Teachers has remarked May 9 for its day of protest against Government policies. It has called on its branches to hold campus meetings with other unions to debate the cuts and bring home the contribution universities make to the country. The Association of Scientific, Technical and Managerial Staffs has told its university members to support the move, but not at the expense of ignoring the TUC's official day of action.

How men and women differ in their career expectations

Male graduates value freedom from supervision, challenging salary, and promotion, while women are more concerned with an opportunity to work with people and making full and constructive use of their time.

This is the conclusion of the latest survey (March 1979) of final year undergraduates carried out by Market and Opinion Research International (MORI), reported in the *Careers Bulletin* of the Department of Employment.

According to the survey, which for the first time includes women, there are marked differences between the sexes in their career expectations.

Men expect to earn more than women upon leaving university and, to an increasing extent during their early and mid career, men plan to stay longer at their first job than do women. Women tend to prefer to work in London while men tend to prefer work outside the capital; men are more interested than women in a very large company and in manufacturing industry, but a high proportion of graduates of both sexes want to work with a small company.

Since 1970 there have been changes in the attitudes of male undergraduates, including the decline in the belief that large companies are essential for the nation's growth, and a strong rejection of the belief that the ability to contribute to society is precluded by working in industry or business.

In 1979 both male and female students considered that job satisfaction, in particular that work should provide a sufficient intellectual challenge, was the most important factor influencing the choice of career.

For the men, full and constructive use of time, responsibility, and opportunity to be creative/original were the next most important factors and carried approximately the same weight. For women these were much less consistent but the use of time element was of greater importance.

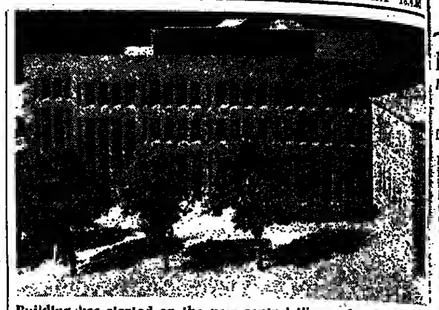
Kirklees Council want more details from Huddersfield

Huddersfield Polytechnic has still not supplied all the details of its future plans in response to a query by Kirklees Council, which is investigating allegations of maladministration at the college.

A meeting of the council's finance sub-committee was adjourned last week until the polytechnic produced further details in response to a questionnaire issued by the committee.

A council spokesman said: "Almost certainly we will now be convening a special meeting at which we will examine the polytechnic's response to our questions. We know this would be a long and tortuous issue and it has turned out that way."

A spokesman for the polytechnic said the college was cooperating as best as it could with the authority. Mr Keith Durrands, the polytechnic director, is understood to have left hospital and is now convalescing at home.



Building has started on the new central library for the University of Newcastle which will provide 1,300 reader places, twice the existing number. The library will cost £3,625,250 and will have space for 525,000 volumes.

Computer methods will be used in organize acquisitions, cataloguing and loans, and to enable readers to have access to the latest mechanized information sources in their own specialist fields. The university hopes to move into the building not later than the beginning of the academic year October 1982.

Race harmony conference comes under attack

by Patricia Santinelli

The Commission for Racial Equality has been attacked this week by West Indian and Afro-Asian organisations for discriminating against black speakers at its conference on education for a multi-cultural society which begins today.

The conference being held at Nottingham University is the launch pad of a £50,000 press and advertising campaign—Operation Link-up—which is designed to improve race relations in Britain through a special education effort.

The conference is meant to bring certain key groups and individuals among educational administrators, teachers and parents together to exchange ideas and devise practical guidelines. Among speakers are Baroness Young, Minister of State for Education, Professor John Eggleston, head of education at Keele University and Mr Christopher Price, MP, chairman of the House of Commons Select Committee on Education.

But at a pre-conference meeting in London, representatives of the Society of Afro-Asian Lawyers, the Black People's Committee Against Racism, the Indian Workers Associations and others strongly criticised the CRE for not having selected a single black educationist as a platform speaker.

"We believe this is symptomatic of the CRE's attitude to black people", the group said. "They want them to participate at the conference by sitting and listening, but not as platform speakers. We do not believe they have made a significant effort to invite black speakers".

Mr David Lane, chairman of CRE, denied the accusation. He said: "This is a completely false allegation. We invited several black representatives, but unfortunately none were able to accept. This allegation is rubbish and I am glad to have the opportunity to condemn it".

A detailed report of the main aspects of the conference is to be circulated next month. It will cover conclusions on whether race relations ought to be taught, what is meant by multicultural education and on education, class race and equality of opportunities. Once the results of this campaign in education have been assessed, CRE will consider the desirability of similar events in other fields.

Poly continues legal rights inquiry

The Polytechnic of Central London is continuing to investigate its Royal Charter as one way of shoring up the activities of the college against continued outside interference.

The record of PCL by Colin Adamson, said the status of the college had become hopelessly obfuscated" in recent years and its relationship with the Inner London Education Authority was "confusing and arbitrary".

"Without the charter, we can be constantly interfered with. The charter would give us into a legal entity, and entrust us with certain robustness", said Dr Adamson.

The Royal Charter was granted to the Regent Street Polytechnic in 1839, ten year after it was founded by Sir George Cayley to teach and research new discoveries in the fields of science and technology. PCL was formed in 1966 by the amalgamation of the Regent Street Polytechnic and the Holborn College of Law, Language and Commerce.

The charter has been laboriously sought by the institution for years, damaging it and is being examined to see what legal rights the polytechnic had been given, said Dr Adamson.

"At the moment we conform to what rules placed upon us, for example on teaching ratios, student staff ratios and so on, and we dispose of a certain amount of teaching against a certain sum of money.

But the concept of arbitrary income is capping the advanced work in further education pool, has shown the importance of being able to control one's own affairs.

Youth work earns praise for colleges

Scotland's further education colleges were praised this week by the Manpower Services Commission for their cooperation in programmes of training and youth opportunities.

Mr Ken Atkinson, the MSC director for Scotland, speaking at the annual conference of the Association of College Registrars and Administrators Scottish branch, said: "We are particularly grateful for your help and understanding at a time when all of us in the public sector are having to change course often at short notice to reduce public spending".

Despite reductions, said Mr Atkinson, the MSC was determined to help industry meet its manpower needs by supporting training in skilled and technical occupations, increasing opportunities for training and work experience for young people and completing the modernization of the Employment Service to help young people quickly find jobs.

The commission's record on these matters was impressive, said Mr Atkinson. About 80 per cent of the jobs notified to its Scottish employment service were filled. Last year it placed 220,000 people in employment. The further education colleges in particular had played a full part in enabling the MSC achieve many of its objectives, such as releasing unemployed people and employers, and providing work experience and work preparation for young people.

North American News

Tuition costs soar for next academic year

from Clive Cookson
WASHINGTON

Fuelled by the general effects of inflation and in particular by soaring energy prices, tuition and other fee increases for the coming academic year will be well into double digits at many American colleges and universities.

Enough institutions have announced their 1980-81 tuition fees (which are known simply as tuition in the United States) for it to be clear that the average increase will be around 14 per cent for the independent sector. Very few private universities are managing to keep below a 10 per cent rise, and at some institutions the increase is nearer 20 per cent.

One of the biggest jumps is at the Massachusetts Institute of Technology, where undergraduate tuition is going up 17 per cent from this year's $5,300 to $6,200 in 1980-81. Major universities that will be charging undergraduates slightly more than $6,200 next year include Stanford, Princeton and Yale Universities.

On top of these tuition rates, students living in college have to pay for room and board, which are rising at a similar rate and will range from $2,500 to $3,000 in 1980-81—bringing total charges above $9,000 at several institutions, and that does not include books and personal expenditure.

The University of Chicago will remain one of the cheapest prestigious private institutions. Its undergraduates will have to pay only $5,100 (up to 13 per cent) for tuition and $2,815 for room and board. Harvard, the most famous American university of all, is raising tuition by 13 per cent to $6,000 in 1980-81.

A few selective liberal arts colleges charge even more than universities. Top of the list will probably be Bennington College in Vermont, whose tuition in 1980-81 will be $7,380. The college has assured students that it will maintain its very favourable 8.6 : 1 faculty: student ratio.

Tuition for postgraduate and professional students is going up even faster than undergraduate rates almost everywhere. That is particularly true of medical schools, whose government subsidies are being phased out as the United States' former shortage of doctors turns into a surplus.

Harvard is increasing tuition for medical students by 20 per cent to $7,800 next year. Dartmouth Medical School will charge students entering its new four-year MD programme $9,500. Even at the relatively cheap University of Chicago Medical School, students will pay $5,760 in 1980-81, 16 per cent more than this year.

At both the undergraduate and postgraduate levels, the tuition increase will no more than keep pace with the universities' rising costs. But they are likely to outpace the average increase in disposable family income, which is expected to fall considerably below America's inflation rate this year.

In order to help poorer student caps with this squeeze, many private universities are planning to make substantially more funds available for student financial aid next year. There will also be more money coming from the federal government for student grants, loans and subsidized campus jobs.

For example the University of Chicago will allocate 21 per cent more of its own funds to undergraduate financial aid in 1980-81, and a similar amount will be added to the postgraduate financial aid budget directed particularly at graduate students in the humanities, social sciences and basic biological sciences (fields where government grants are relatively scarce). New York University, whose undergraduate tuition and fees are going up 12 per cent, will increase financial assistance to needy students by 18 per cent.

On average, tuition and fees in public higher education, which is shielded by state legislatures from the full effects of inflation, will probably go up by less than in the private sector.

The average increase at state colleges and universities is likely to be in the region of 10 per cent in 1980-81, though it is really too early to be sure, since many states have not completed their higher education appropriations process.

But the average for the public sector will conceal big differences from state to state, depending on local political circumstances. There will be no increase at all in the $925 tuition at the City University of New York.

On the other hand huge increases may be needed in California. If voters there approve a 50 per cent cut in the state income tax in the June referendum to offset fully the last, revenue, the University of California might have to double or treble its current $750 annual fee.

Exam board heads off legal battle

In a significant concession to consumer demands for more public scrutiny of university admissions tests, the College Entrance Examination board says it will release additional information about its tests to candidates and the public. The announcement will not satisfy "truth in testing" activists like Ralph Nader, who are demanding the complete removal of the veil of secrecy that surrounds standardized tests in the United States, but the board hopes it has conceded enough to head off the test disclosure bills being introduced in state legislatures all over the country.

College board president George Hanford combined his announcement of the more open procedures with a new attack on test disclosure legislation. "We oppose it as educationally unsound, as a threat to the validity and fairness of admissions testing, and as an unwarranted burden upon students in terms of both costs and reduced services", he said. "If the usefulness of what we are voluntarily providing rests on a nationwide basis is compared with the impact of what is mandated by law in New York, we believe that most students as well as most educators and most lawmakers will agree that such legislation is unwarranted."

The country's first test Disclosure Act took effect in New York in January (see *THES* January 4). It requires the college board and other test sponsors to release the questions and correct answers after any college or university entrance exam, and to send candidates a marked copy of their own paper on request. The board's new national procedures do not go that far, but they do represent a major reduction in secrecy.

Candidates nationwide will for the first time be able to check their scores on the Scholastic Aptitude Test (SAT), the main college entrance exam. Any of the 1,500,000 high school seniors who take the SAT annually may buy back their multiple choice answer sheet after it has been marked, with a scoring key. This information will enable them to check that the computer has marked their papers accurately, but, unlike New York candidates, they will not be able to get back a copy of the multiple-choice questions (which cannot of course be removed from the examination hall) nor the correct answers.

Once a year, however, the college board will publish one of the seven SAT forms administered annually, with "a complete statistical analysis of its characteristics for study by researchers and the public". That is an important concession from an organization that has until now only ever made public one sample test (in 1978).

Despite the New York law, the college board will still be able to keep many questions secret, because the SAT will be administered in New York on only half the usual number of occasions. The Educational Testing Service (ETS), the Princeton-based organization that actually produces the tests on contract for the board—gives several reasons for maintaining a pool of unpublished and therefore reusable questions.

ETS says the quality of the test would fall if it had to develop an entirely new set of questions for each examination, because it would not have sufficient skilled personnel to do the work properly. In addition, candidates would have to pay more than the current $8.25 fee to take the SAT.

The best way to ensure the "validity" of the SAT is to try out new questions as dummies, which do not affect the candidates' scores, among the real questions in the test form. That allows ETS to weed out questions that are too easy, difficult or that do not distinguish adequately between candidates of different abilities. By using some questions on successive tests, the difficulty of the SAT is maintained at a constant level over the years.

The college board announced bigger changes in the Preliminary Scholastic Aptitude Test (PSAT), which is normally taken a year before the SAT itself. It is a less important exam, as colleges and universities do not use it directly to select students. However it is used by hundreds of different scholarship-granting organizations to distribute awards to the brightest college applicants, and candidates who do particularly well on the PSAT are eligible for the prestigious and valuable National Merit Scholarships.

Henceforth, PSAT candidates will automatically receive complete copies of the questions and answers when they get their scores. Until now the college board has not made available even one full sample PSAT.

Dr Hanford said the board would start publishing all PSAT forms, but not all SATs because its trustees "believe that if there is any educational benefit to be gained from studying old tests, it is at the earliest possible stage, when a student has the longest lead time to address weaknesses that are revealed by practicing or taking the test".

Dr Hanford emphasized that the trustees still do not agree that "intensive study of questions and answers over a short period will improve individual scores significantly".

In another conciliatory gesture to the critics of standardized tests, who claim their content is biased against minority candidates, the board said it would appoint independent teachers and professors, "who are sensitive to detecting potential racial, cultural or sexual bias in new forms of a test", to its test development committees. Their approval will be needed before new questions are introduced.

Taken together, the board's latest actions, according to Dr Hanford, "address consumer concerns responsibility. These actions do not jeopardize the test's essential purpose, which is to be a fair, uniform, national standard that facilitates access to higher education and serves as an important means of identifying talent and opening educational opportunities for students from lively known schools, for minority groups, and the disadvantaged".

University admissions officers almost unanimously support the college board and its opposition to legislation forcing full disclosure of admissions tests. Like the New York law, which has been introduced but not passed in more than a dozen other state legislatures and in the United States Congress. They do not want to risk weakening what is a very useful tool for them. Surveys show that for more than half of the country's four-year colleges SAT scores are a very important factor in selecting students—though generally not as critical as the applicant's high school grades.

Peking Institute chooses partner

The Institute of foreign trade in Peking has chosen its first exchange partner in the United States—the American Graduate School of International Management (CASIM) in Arizona. According to the memorandum of understanding between the two institutions they will "jointly exchange students and faculty for scholarly purposes" but also use the programme to help the United States and China develop their business and trade relations.

California gets new chancellor

Richard Atkinson, director of the National Science Foundation, is to leave Washington in the summer to become chancellor of the University of California, San Diego. There he will again succeed William McElroy, who was his predecessor at the foundation.

Dr McElroy resigned as chancellor of the San Diego campus after a vote of no confidence in him by the faculty who felt he was not consulting them enough. But, despite his experience, the University of California regents decided his best successor would be the man who took over from him at the foundation.

Dr Atkinson, who is an experimental psychologist, moved from Stanford University to the foundation as deputy director in 1975 and was appointed director in 1977. He is generally regarded as having been a successful leader of the foundation, which is the main distributor of government grants for general scientific research in universities (roughly equivalent to Britain's Science Research Council).

Pleas fail to halt professor's Greek trial

The trial of Canadian Professor A. C. (Tasos) Kazepides, on charges of maliciously insulting the Greek Orthodox Church in a scholarly essay, is to go ahead in Athens, despite a deluge of letters from colleagues around the world asking the Greek Government to drop the case.

Dr Kazepides, professor of education at Simon Fraser University in British Columbia, missed the opening of his trial on March 31 because his doctor, who is treating him for a stomach ailment, advised him to remain in Canada. Proceedings were then adjourned until May 14 at the request of the public prosecutor so that Dr Kazepides could be present, and the Greek-born professor says he intends to fly to Athens next month to take his place in the dock.

The nine-member executive of the Secondary Education Teachers' Confederation of Greece, whose journal published Dr Kazepides's essay on "The ideological conditions and the indoctrination of the young in Greek education", have also been charged with having "maliciously insulted" the church "with vulgar and sarcastic expressions".

"Since the consequences of a ruling against us would be so serious for the other teachers involved as well as for the future of education in Greece, I decided that I must go and make my contribution", said Dr Kazepides, who had considered boycotting the trial.

Several hundred colleagues from university education departments all over the English speaking world wrote to the Greek Government, urging it to drop the charges. Dr Kazepides said he was particularly moved by the support he received from academics in Britain, Australia and New Zealand.

However, the Government said that because of the constitutional separation of the executive and judiciary in Greece, it could not call off the trial. As the Greek ambassador to Canada, D. C. Yeliastropoulos, wrote to Simon Fraser University president George Pedersen, "in view of . . . the inadmissability for any democratic government in the world to interfere with the judiciary, you will agree, I hope, that there is nothing that the executive can do except to assure you that in Greece everyone's democratic rights are scrupulously respected as our judiciary is independent and judges have a position of high standards and fairness".

Despite the failure of his campaign to stop the trial, Dr Kazepides remains optimistic that he and his nine co-defendants will be acquitted. More than 20 distinguished Greek intellectuals have volunteered to testify on their behalf, he said, "whereas the only prosecution witnesses are six Greek theologians who claim that the distinction between education and indoctrination cannot be made in the case of Greece, because the doctrines of the Greek orthodox church, unlike other inferior religions, are the correct ones."

But Kazepides's essay maintains that in Greece "the intellectual development of the young is violated by the continuing and systematic teaching of religious and political doctrines that cannot withstand objective public analysis and criticism". It provoked 2,500 high school teachers of religion—or "religious indoctrinators" as Dr Kazepides calls them—to send protest telegrams to the Government.

Justice Douglas: defender of civil liberties

Judge leaves retreat for scholars

The late William Douglas, who served on the United States Supreme Court for 16 years, has left property in Nova Scotia, Canada, to be developed into a scholarly retreat.

His will specified that scholars from any country in the world should be able to go to the William O. Douglas retreat for up to a year to write or do other creative work. Preference would be given to scholars from the Soviet Union, Iran, Vietnam, China and Mongolia.

Justice Douglas, who died in January at the age of 81, was a member of the Supreme Court from 1939 to 1975. At the same time he wrote many books.

Although Justice Douglas was born and grew up in the United States, his family origins were in Nova Scotia. He has owned the 15-acre property in rural Pictou County—the site of the proposed retreat—for many years.

The will named two Nova Scotia universities, Acadia and Dalhousie, as possible trustees to administer the retreat. Both institutions seemed to have been taken by surprise and their spokesmen said they had not yet been approached by Justice Douglas's executors.

The arrangements for setting up the retreat are expected to take some time to work out. It is not clear how much student will be available for new large the retreat might be.

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Overseas News

Chile junta purges university lecturers

Over 100 lecturers in three Chilean universities have been sacked as part of a new purge of academics. Now, as part of what the junta describes as "a process of adjustment and restructuring", a new law is to be introduced governing higher education.

The dismissals have been justified on grounds of economy but have been greeted by protests from staff and students, who see them as purely political. The universitias' action, which follows the expulsion of a number of students last year, seems to signal an end to the fragile truce existing on the campuses of Chile.

General Pinochet apparently sparked off the purge during meetings at the beginning of the year with the military rectors of the country's eight universities, when he said that they were undergoing an unacceptable political upsurge.

The minister of education, Mr Gonzales Vial, who had presented a plan for university reform, had already resigned and General Pinochet set up an advisory committee to draft the new law. The magazine *Index on Censorship* reports that at the same time deans at the University of Chile were asked for accounts of the professional, technical and political records of their staff.

Days later the first sackings were carried out: 41 at the State Technical University, 17 at the Catholic University and 37 at the University of Chile. The rectors of the Universities of the North and of Concepción were also replaced.

Mr Malcolm Coed, Latin American specialist for *Index on Censorship*, says that most of the dismissals were in faculties considered politically sensitive.

The strongest reaction came at the University of Concepción, where another 25 lecturers were sacked last month. These were attributed to over-provision of classes although the rector, Major Guillermo Clericus, had recently advocated "the recovery by the university of its purist, where only academic discussion will be permitted".

Since then further unrest has been caused by the demand by the rector of the University of the South for the resignation of the philosopher Jorge Millas Jimenez, who had given a newspaper interview criticizing the government's control of the press.

Dutch students fight planned study reforms

from Lionel Cohen NIJMEGEN

If Holland's education minister has his way there is little doubt that 1981 will be a vintage year for Dutch university reforms. This was the impression which determined Minister Pais conveyed to press and public alike last week when he published the definitive version of the long-discussed draft law for a shortened "two-phase" structure for university studies.

Under this measure, which forms part of a wider university reform programme which parliament will debate later this year, the initial period of undergraduate study is to be cut to a "normal" duration of only four years with a maximum of two years' overrun.

This will replace the present six-year "norm" for this study which, in practice, takes most students eight to nine years to complete. Under the present system the successful completion of undergraduate studies provides automatic right of entry to most relevant professional occupations, the new plan requires all aspiring teachers, accountants, doctors and veterinary surgeons to first complete a "second phase" of one or two years' graduate study.

The financial economies which this reform could provide for Holland's hard-pressed higher education budget depend considerably on an effective "weeding-out" of less able graduates at the end of the "first phase".

Dutch university students are strongly opposed to any form of selective entry into the planned "second phase" of study and are angry that successful completion of perhaps six years' work on the initial "first phase" programme would in future no longer automatically guarantee them equal access to relevant professional occupations.

With entry to this second phase originally planned for only 40 per cent of first-phase graduates, the job outlook for the remaining 60 per cent looked bleak and many students fear that, unless the quality of university teaching is also improved, the planned reduction in programme length for the first phase of study would be accompanied by a general devaluation of academic standards. A new race of "second-class graduates" would be created.

Students reacted sharply by occupying administrative buildings when, early in March, the Agricultural University of Wageningen announced plans to introduce new "two-phase" course structures in some disciplines from 1980—one year in advance of the anticipated legal requirement. Student action groups rapidly formed in other universities to fight the reform proposals.

As a result a more flexible method of selecting entrants into the "second phase" of university study is now planned under which, within limits, the universities will themselves be able to determine how many graduate students they can admit into each faculty.

The draft law also incorporates special exemptions for part-time students from the time-limits for completion of each phase of study.

Move which will permit the regulation of study programmes in Holland's planned Open University to be linked to "conventional" university programmes and to fall within the ambit of a common academic law.

But whether these modifications will go far enough to meet present student demands remains doubtful.

Instructor Fathey Gawish (centre) demonstrates the workings of a car engine at Moharrem Bey well-equipped workshops.

Bradford strengthens Egyptian link

by Hilary Wilce

Five technical experts from Bradford College are flying out to Egypt next week to continue British aid to one of the country's key technical training institutions. Their departure comes at the beginning of a much closer twinning of Bradford College with the Moherrem Bey Technical Training School, at Alexandria, on Egypt's marshy Mediterranean coast.

For three years Bradford technical teams have been doing two-month stints at Moharrem Bey. More than 30 Egyptian staff have been trained at Bradford.

The link between the two institutions will in future be administered by a full-time Bradford-based coordinator, and the college's commitment to supplying advisors is likely to more than double.

Seven years ago Moharrem Bey was a dilapidated technical training school. But Egypt's chronic shortage of skilled manpower made the upgrading of technical education an urgent priority. It was earmarked for development as a pilot five-year school, training technicians rather than skilled labourers.

Since then, with £3.5m in British aid and considerable technical assistance, the school has become a successful showpiece institute with 1,200 students training in electronics, mechanical engineering and motor vehicle maintenance.

The school works to City and Guilds standards, and the first two years of pupils to finish their training have been snapped up. "Some of our graduates go into English firms here and are earning more than the principal himself", Mr Abdul el Fatteh Hossny, the vice-principal, said.

Mr Terry Bohle, a British technical cooperation officer who has worked at the school for almost three years, has seen a definite improvement in the attraction of technical education. "The quality of boys coming into the school is really gone up", he said.

Six other technical schools are to be remodelled as five-year institutes. Meanwhile, Moharrem Bey, with the help of World Bank money and British aid, is now developing an in-service training and upgrading technical teachers who are working in three-year courses.

Boys enter the college after two years of general education and English language training before taking up their specialization. Training is done in a mixture of Arabic and technical English.

In its training programme Egyptian staff, Bradford College priority has been to develop practical and confidence.

"But our staff also get a lot out of the involvement", says Dr Paul Gallagher, head of the school of design and technology. "They learn about standards and conditions in another part of the world, and they make more practical teaching judgments than they do here."

Plans afoot to demote India's rural colleges

from A. S. Abrahem BOMBAY

The University grants Commission (UGC), which not only funds but also oversees much higher education in India, has suggested that at least some of the 4,700 colleges affiliated to over a hundred university sites throughout the country should convert themselves into "rural polytechnics".

It proposes this effective demotion in academic status for those colleges, many of which are in rural areas, which do not consider to be "viable". To be viable "colleges should be linked to one with at least 400 students on the rolls, not counting preuniversity and similar pre-academic enrolment.

In those states, whose universities offer two-year arts, science and commerce first-degree courses rather than the standard three-year course, affiliated colleges must enrol at least 270 students to be viable.

The UGC is concerned at the growing number of non-viable colleges in the country. It fears that these colleges, which often lack the most rudimentary facilities, are bringing down higher education standards and are potentially explosive as more and more students graduate to find their job expectations cannot be met.

The political status which state governments gain by founding new colleges are likely to inhibit them from downgrading them to "rural polytechnics". They are accusing the UGC of "urban elitism" and claim the proposal would mean reinforcing the traditional concentration of higher education in urban areas, with the rural ones being given the cream from the high table.

The UGC is also alarmed at the alarming rate at which private graduate colleges independent of universities which normally control postgraduate courses are being opened. There were over 600 such colleges, some 90 per cent of them in seven states and 60 per cent in three states alone (Maharashtra, Uttar Pradesh and Madhya Pradesh), of which are well-served by university sites.

Berlin to get new-style comprehensive college

from Gunther Kloss BERLIN

West Berlin may soon get a third university-type Hochschule, in addition to its technical university and its Free University, if a referendum last November sent its Free University which was founded in 1948 in protest against the political pressure by Communists on the old Humboldt University in the Russian sector of the city.

The move runs counter to the trend in most parts of the Federal Republic, where the main phase of reorganizing higher education is over. The founding of the Gesamthochschulen (Comprehensive universities) in the early 1970s was the most innovative measure in this context.

In Berlin, however, the dissolution of the College of Education and the subject by subject integration of its parts into the Free University, the Technical University, and the College of Art and Music began only this month. Many staff and students oppose the least these of intimidation have not yet been solved so that in fact most departments will remain for some time in their old quarters.

The planned creation of the new Hochschule is a much more ambitious and controversial undertaking. The basic problem is that West Berlin has several Fachhochschulen (vocational colleges), whose functions partly overlap and whose student numbers are declining as more and more people leave upper secondary schools with the qualification for university entrance (Abitur) rather than with the lower level Fachhochschulreife. Many of the colleges' courses do not meet the varied needs and frequently conflict with equivalent courses which industry, unions, technical and politicians have stipulated.

The new institution is likely to combine all or most of the six colleges: an advanced technical college; an administrative college; a college of economics; a social works college; a further social works college run by the Protestant Church, and the advanced vocational colleges of the Federal Postal Service.

While the CDU opposition in the city parliament clearly wishes a better collaboration between these institutions, the West Berlin government and especially its determined higher education minister, Mr Peter Glotz, envisage a much greater degree of integration, independent of the existing universities, leading to a third comprehensive university within the city.

Several plans have been put forward. Glotz proposes an institution with a predominantly social science orientation. Another, currently favoured by the minister, recommends a closer link between technology, natural sciences and social sciences.

Both employers and trade unions support the idea but while the employers want to link courses and future jobs as closely as possible, the unions object to the exclusion and eventual closure under the plan of the College of Economics, which is society-oriented, has links with the trade union movement and is considered so to be Marxist-influenced.

Graduate survey knocks system

from Ulf Schmelzer

Italy's "mass" university received another hard blow recently from a campus survey which revealed that visits and movements over the last three days had steadily climbed, and that had declined just as steadily.

The survey, conducted by the university of Rome, the country's largest mass university, backed the growing demand for academic reform, the reduction of overcrowded classes and entry examinations, the third vice-principalship, later in the year.

Mr Kamba, a charming, gently spoken man with an enthusiastic handshake, is pleased by this arrangement which reassures continuity. "I think the council was genuinely concerned with appointing the right people for the job. I've met Prof Lewis, and he's tremendous. I have no doubt he will put the best he can into the future of the university."

He looks forward to the opportunity of shadowing Prof Lewis before he takes over, although he has gained much administrative experience in his last two years as dean of the law faculty at Dundee University.

Mr Kamba, a former attorney in Rhodesia, first came to Dundee university as a lecturer in comparative law and jurisprudence in 1969, having worked as a research fellow at the Institute of Advanced Legal Studies in London University.

He is unforthcoming about his exile. "The political situation forced a lot of Zimbabweans out of the country. The situation deteriorated; now it's solved." He missed his homeland, but made a conscious, sometimes considerable effort, not to let it interfere with his work.

But he was always hopeful of returning, with his wife and three sons, and never thought things would stay as they were indefinitely in Rhodesia, although it was difficult to visualize the circumstances in which he would return home. He felt the political situation was so complex, there was no indication of it being resolved in the near future, and admits the speed of events in the last six months took everyone by surprise.

Now there is exhilaration, eagerness to meet the challenge of helping build up a new Zimbabwe. And as he prepares to return home next month, is there no bitterness about the past?

"I think the sad thing in dwelling on bitterness about the past is that you are inhibited in developing the future. What we need to do is forget the past, realize our resources and make the maximum possible use of them. And the indications, at this time, are that this is what is emerging throughout the country."

Indeed, says Mr Kamba, the elections have been virtually forgotten already, with everyone concentrating on the country's future.

And the university has a vital role to play. Mr Kamba points out that it is the only university in the country, with a student population of under 3,000 in a country of some seven million people. "And Scotland, with a population of five million, has eight universities. It is likely that the emphasis at a university which is the country's only university will need to shape degrees to reflect the needs of the country. There will be an emphasis on certain disciplines—we have so urgent need to establish veterinary science—but at the same time we will try to maintain the standards of a university as they are generally understood."

But the rate of growth this university will be expected to make will place a heavy demand on resources: staffing, accommodation, equipment, library facilities.

"So far, money has come from a number of sources: the government, the World University Service and others, but needs are going to be greater not only in terms of students, but the development of the university. But now the government is going to be preoccupied with much more urgent needs such as the revival of the economy, resettling refugees and reestablishing the medical services. Part of our concern, therefore, will be to get support to various forms from well wishers. I'm hopeful we'll get it and that people will come forward with help before they're approached."

He, his wife and 13-year-old son will return to Salisbury next month. His 17-year-old son, due to go to university in October, has still to decide whether he will take a degree in Zimbabwe or Britain. His 19-year-old son, in second year law at Birmingham University, will complete his degree before returning.

"But home is home. They'll all come back to Zimbabwe and play their part. Everyone is needed."

An old university outlives the legacies of the ultra-left

In his continuing series of articles on higher education in China, Peter Scott visits Peking University

Peking University a few miles from Qinghua is as near as opposite as can be conceived in a system of higher education that is centrally planned. Like Qinghua, Peking is a "key" university directly administered by the Ministry of Education but they have little else in common.

The university campus is a mixture of grace and austerity—on the one hand a pagoda (actually a water tower in disguise) by a pine-fringed lake and a pavilion in the traditional Chinese style in groves of bamboo; on the other barrack-like dormitories and refectories and sparsely furnished classrooms.

More important than either grace or austerity, however, is Peking University's commitment to building socialism in China. Its overriding ideological goals are symbolized by a giant statue of Mao Tse Tung in the library square and the notice above the library door in the calligraphy of Deng Xiaoping, senior vice-premier and the most powerful man in China today.

Peking is an old university—it was founded under the empire in 1898, one of the few tangible achievements of the "Hundred Days" reform — and a comprehensive university, which means it is a university in the British sense, offering a broad range of subjects (although not engineering). Its greatest strengths are in traditional humanities subjects, especially Chinese language and literature, and pure science, especially physics.

Like much of Chinese higher education, Peking University is poised, rather uneasily, between the turbulent past of the Cultural Revolution and the rule of the so-called "Gang of Four" and the apparently elitist policies being pursued by the new leadership.

The Cultural Revolution was a traumatic time for the university. It was closed for four years after 1966, some of its dormitories were wrecked, and the legacy of ultra-left turmoil is still there in the form of undersized capacity and under qualified staff.

Peking, for example, has 8,000 students, including 620 postgraduates (and 129 overseas students). Before the Cultural Revolution it had 10,800. One reason for the decline is severely practical. Fewer residential places means fewer students in China where staying on campus is virtually compulsory.

But another, and perhaps more important reason is that a demoralized and disrupted secondary school system failed to produce as many well-qualified candidates as before the Cultural Revolution. At Peking they hope to enrol 12,000 students by 1985 with an especially large increase in the number of postgraduates to 1,800.

Undersqualified staff is another legacy of the years of disruption. Peking has 2,500 staff, which even for 12,000 students means a favourable staff student ratio. But Mr Ni Meng Hsiung, the university's director of foreign affairs, explained that some of the younger lecturers had had to be sent on two-year in-service courses to improve their qualifications.

He added that because of the disruptions of the past 10 years these lecturers were not blamed for their inadequacy. But if after further training they were still not of sufficiently high standard, they would have to be reassigned to appropriate jobs. He also admitted that in some cases the very bright students who came into the university after passing the new highly competitive entrance examinations might be dissatisfied with the quality of some of their staff. The answer was to raise the latter's academic level; 110 lecturers had been sent to study abroad, mainly in the United States.

The new policy is one of apparently relentless elitism. The emphasis placed on training technical experts and educating the intelligentsia in general appears not only to have been restored in its pre-1966 level but even intensified.

Mr Ni said that today in China there was the greatest urgency for intelligence, for skilled people, for technical experts. "The Gang of Four said that intellectuals were an elite. This was a distortion. We need intellectuals to build socialism. It is not so much a question of wanting to mix with peasants and workers. It is a question of wanting to serve socialism."

"It is wrong to label intellectuals as an elite", said Mr Ni. "In a socialist country like China intellectuals serve the people heart and soul. They must be red and expert".

At Peking University this new policy has taken several forms. A "key" middle school which recruits gifted pupils from all over Peking has been specially attached to the university. In some of its classes 70 or 80 per cent of pupils go on to the university. In one class 56 out of 60 went to Peking University.

Another aspect is the decline in the average age of students as more and more students come straight from school at the age of 17 rather than after some years in a factory or commune. A third is the high academic standards of the new generation of students.

Although no drop-out rate is available because the courses have been reorganized and will not produce their first graduates until 1982, so far not a single student has had to repeat a year because of examination failure. Competition is fierce, although no overall figures is available. It is particularly intense in physics.

A fourth symptom is the new emphasis on research and postgraduate study. The number of postgraduates is to be increased six times as fast as that of undergraduates. Mr Yu Sin Goo, an official in the president's office, explained that the university's research was on three levels: first, important research in pure science and national defence; second research commissioned by government departments such as the Department of Oil Industry; and third, research closely related to the university's teaching. Although Peking has postgraduates in every department, the main thrust of future development was likely to be in science, especially physics.

But bounds are set on the new elitism. Mr Ni recognized that the chances of the child of the city intellectual going to university were many times greater than those of a rural peasant. He said the university was very conscious of this disparity and the consistent policy was to give positive discrimination in favour of workers' and peasants' families.

Mr Yu added that out of the annual enrolment of 2,000, 20 per cent came from rural areas. The proper solution was to raise educational standards in rural areas. He admitted that a serious imbalance existed at present.

There is some evidence that Peking University enrols students from a slightly wider social range than Qinghua. Here about 60 per cent of students receive the basic Government grant of 35 yuan a month, so implying that more students from poor families are admitted.

Yet Peking remains, certainly in Chinese terms, a traditional university. It has 22 departments: 12 in science (maths, statistics, physics, chemistry, biology, earth sciences, geology, geography, electronics, psychology and computer science) with a clear bias to pure rather than applied science; seven in humanities (Chinese language and literature, history, philosophy, economics, international politics, law, and librarianship; and three in foreign languages (Oriental languages and literature, modern languages and literature, and Russian language and literature).

The most popular subjects among students in science are physics; in humanities Chinese language and literature; and in languages English. For obvious political reasons Russian is in decline, down from 240 students to only 60. Psychology in contrast is expanding, having just broken away from philosophy to form a separate department.

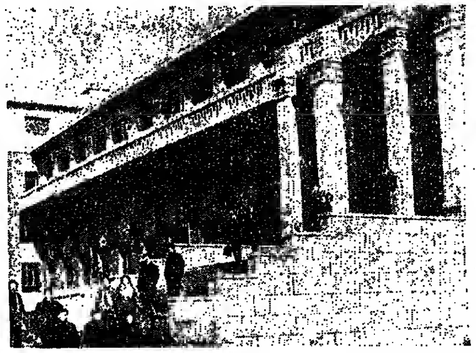
Thirty-two per cent of the students are women, with more than half in some language departments, and much lower proportion in departments like physics and geology.

Mr Ni explained that planning future student numbers and the subject balance was a matter for negotiation between the university and the Ministry of Education in association with the higher planning authorities but the latter having the final say.

The university submitted its plan to the Ministry, taking into account likely student demand. The Ministry and national planning authorities reviewed this plan in the context of national economic planning and available capacity. A national plan was then produced giving targets for each university—but these plans went back and forth several times.

In spite of its gracious pavilion and pagodas Peking University is an austere place to western eyes. Its library is new and contains 3.2 million books, but has no frills. The students' refectory serves cheap food (30 yen or 9p for lunch) but is reminiscent of an army mess hall. The students themselves seem light years away from their predecessors, the Red Guards, who closed much of Chinese higher education for years (with a little help from higher authority). Purists, studious, and serious-minded almost to a fault, their two most recent complaints have been poor lighting in their bedrooms so making evening work difficult and a campaign to open classrooms in the evening because too few reading spaces were available in the library. Both were successful.

Peking is a traditional liberal university, badly battered by the Cultural Revolution but trying hard to regain its reputation for academic excellence. But it has to pursue three goals that are not easily reconciled; the traditional goals of a university with its commitment to reasonably objective scholarship. Its need to play its part in the "four modernizations" with their clear elitism; and its desire to open its doors to a wider section of Chinese people than in the past. Yet it is some measure of the hidden diversity of Chinese higher education that no arbitrary or crude methods have been used to resolve this perhaps inevitable ambiguity. The ethos of Peking University is very different from that of Qinghua, its neighbour. But both in their own ways are making complementary contributions to the building of a new China.



The university: still traditional.

Olga Wojtas talks to the vice-principal designate of the University of Zimbabwe

Mr Kamba's summer appointment is no vacation job

In January, Walter Joseph Kamba set foot in Rhodesia for the first time in 13 years. It was an emotional moment.

"I just stepping off the plane was wonderful. The country is so beautiful at that time of year. Already there was the fever of the election. There was an air of freedom."

Mr Kamba had returned to Salisbury to be interviewed for the post of vice-principal of the University of Zimbabwe, as it will soon be known. He was officially appointed by the university council on March 2, and when he takes up his appointment on June 1 he will be marking to take over the principalship when the newly appointed principal, Professor Jack Lewis, retires in 18 months.

Many people anticipated a black academic being appointed immediately as principal and there was surprise when the post went to Professor Lewis, a 70-year-old Welshman. The present vice-principal, Professor G. Bond, who was due to retire, has had his appointment extended for 18 months and the council has indicated it will consider establishing a third vice-principalship later in the year.

Mr Kamba: "The task is formidable."

But he was always hopeful of returning, with his wife and three sons, and never thought things would stay as they were indefinitely in Rhodesia, although it was difficult to visualize the circumstances in which he would return home. He felt the political situation was so complex, there was no indication of it being resolved in the near future, and admits the speed of events in the last six months took everyone by surprise.

Now there is exhilaration, eagerness to meet the challenge of helping build up a new Zimbabwe. And as he prepares to return home next month, is there no bitterness about the past?

"I think the sad thing in dwelling on bitterness about the past is that you are inhibited in developing the future. What we need to do is forget the past, realize our resources and make the maximum possible use of them. And the indications, at this time, are that this is what is emerging throughout the country."

Indeed, says Mr Kamba, the elections have been virtually forgotten already, with everyone concentrating on the country's future.

And the university has a vital role to play. Mr Kamba points out that it is the only university in the country, with a student population of under 3,000 in a country of some seven million people. "And Scotland, with a population of five million, has eight universities. It is likely that the emphasis at a university which is the country's only university will need to shape degrees to reflect the needs of the country. There will be an emphasis on certain disciplines—we have so urgent need to establish veterinary science—but at the same time we will try to maintain the standards of a university as they are generally understood."

But the rate of growth this university will be expected to make will place a heavy demand on resources: staffing, accommodation, equipment, library facilities.

"So far, money has come from a number of sources: the government, the World University Service and others, but needs are going to be greater not only in terms of students, but the development of the university. But now the government is going to be preoccupied with much more urgent needs such as the revival of the economy, resettling refugees and reestablishing the medical services. Part of our concern, therefore, will be to get support to various forms from well wishers. I'm hopeful we'll get it and that people will come forward with help before they're approached."

He, his wife and 13-year-old son will return to Salisbury next month. His 17-year-old son, due to go to university in October, has still to decide whether he will take a degree in Zimbabwe or Britain. His 19-year-old son, in second year law at Birmingham University, will complete his degree before returning.

"But home is home. They'll all come back to Zimbabwe and play their part. Everyone is needed."

Peter David and Simon Midgley on the BSA's 30th anniversary

The grand assize of sociology

Alvin Gouldner, the apostle of self-critical sociology, would have relished last week's thirtieth anniversary conference of the British Sociological Association. More than 300 sociologists met at Lancaster University for what Professor Tom Burns called a retrospective "grand assize" on the state of the art, writes Peter David.

The overall impression was of a discipline doggedly committed to its task and certain of its value and future in academic life. But there was no hiding the gnawing fear of its senior disciples that sociology's internal intellectual fissures were conspiring with its external popularity to pose a growing danger.

Evidence of the external lack of popularity was brought into the heart of the conference in the person of Mr Michael Posner, an economist and chairman of the Social Science Research Council. After sprinkling some routine compliments—he praised sociologists' "scholarly respect for facts"—he made it clear that his council regarded sociology as important but not uniquely necessary.

Combined with the SSRC's decision to do away with a quarter of its sociology postgraduates, and with the threatened closure of a large sociology department at the North East London Polytechnic, Mr Posner's remarks sharpened a suspicion among the assembled academics that sociology was beconing a discipline under siege.

Most were prepared to take a sanguine view of the external threat, however. Professor Philip Abrams, for example, believed that much of the panic could be dismissed as "melodrama-froth whipped up perhaps from minor frustrations and a curious mixture of self-doubt and self-importance".

Sociology had indeed passed through its boom years—with 28 new departments and 30 new chairs created in a single decade—but it was not now heading for bust. The departments would survive if sociology could only end its "morose inner dialogue" and recognize that it was a polemical discipline which could not expect friends in high places.

But in the wolter of some 80 papers presented at the conferonco there appeared to be less confidance in the ability of sociologists to bind the subjecto inner woundo end reconcile the sherp divisions between the Marxists eod the non-Marxists, the "critical theorists" end the empiricists. The senior professoriat—notably Professor John Rex, the doyen of British race relations research—clearly saw the jubilee conference es en opportunity to mount a counter-offensive against the younger radicals who

Upheevols of 1968 opened the discipline's floodgates.

hod invaded the discipline in the decade of expansion before 1970.

In Rex's view the democratization of the liveller sociology departments in 1968 had opened the discipline's floodgates to admit a deluge of Marxists and phenomenologists whose work boro little resemblonce to real sociology. In the 1950s, Rex recalled, he had himself been a "Young Turk" determined to end the simple-minded positivism and politically quiescant Fabianism which domjoated ooclology at the London School of Economics.

His famous book of the period, *Key Problems*, had called for more attention to be peld to opiatemological questions and to conflict (and hence Merxism). Both cells had been onsworod, but then teken to preposterous extremeo by dogmatic or obscurantist Marxists on the one hend, and on the other by "critical theorists" whose philosophical sophistication had merely undermined the confidenco of the discipline in its own techniques. "To hell with Althusser and Pêcheux," Rex announced, "I believe there is such a thing es truth."

Rex's lecture was received with the polite deference reserved for one of the discipline's leadore. In the conforonce bars leter younger colleagues accused him of raking the embers of long-dead battles fought in the second *New Left Roview*. But his two thomes—the nood to keep Marxism in its place ond rescue emplrical sociology from the paralysis induced by the disciplino's philoophare—were echoed in e number of key popers.

Professor Abrams pointed out that the Merxist intrusion in sociology had been e positive gain, serving sociology from the "fetishism of technique" which had gripped psychology, for example. Nevertheless, sociology had still to find a way of living with Marxism "as o cogent mode of social analysis within the academic establishmeut of a capitalist society".

Probably the most stinging reinforcement of Rex's second theme—the need to reunite theory end practice—came in e sardonic paper by Professor Peter Abell, who claimed that social theory on its own had contributed virtually nothing to our social knowledge. The obsessiloo with theory had, however, produced a "calamitous" pattern of work among sociology postgraduates. He was olarmed that so many were doing doctorntes on the theoretical contributions of people like Parsons, Althusser and Huhermoss. "Not only do I think this a waste of time as the authors in question do not warrant such attention, but even if they did I feel it puzzling that a student with no experience of what the conceptuel compromiseo one has to make in research are should be so engaged.

"If the above theorists and the like hove over a lifetime's experience given us ideas of worth then what possible purpose esn he served by e relatively inexperienced doctoral student culling arnund to find conceptual inconsistencies? If the ideas are of worth then put them to work."

More moderate calls for empirical reserch came in popers by Dr Maurean Cain and Dr Janet Finch, who advocsted new rospect for data and the restoration of "crofts-manship in intellectual production". Dr Christopher Husbands deplored the long anti-quantitetive bias in British sociology, and Dr Catherine Marsh ridiculed the nowly orthodox view that research using social surveys was inevitably positivist.

The size and diversity of tho conferance mado it impossible to tell how reprosentative theso new themes were of British sociology. The discipline remains fractious, with e multiplicity of esoteric splinter groups still claiming the allegiance of many. A small group of othnomethodologists, for example, staged intense lecturos for the converted on the margins of the conferance, drewing the occasional curious tourist from the mainstream.

Only the enormous expansion of sociology in Britain over the lost two decades hos mode the degree of diversity possible. Dr Frances Heidensohn spotted the "ultimete paradox."—that the discipline wos ot its most politically influentinl in its oorly Foblen days, when it wes at its weekest intollectually and institutionally.

Leodor, page 31

Lingering identity crisis

The British Sociological Association is in many ways a curious hybrid. Seddled from the start with a conflicting set of aims it has suffered from a lingering identity crisis which to this day it has never been able to resolve.

Founded on the one hand as a nationwide forum for anyone interested in sociology irrespective of qualifications, it was also intended to be a learned society engaged in advancing knowledge and raising standards of scholarship.

Over the years these mutually contradictory purposes have pulled against each other and various moves to professionalize the association including an attempt to create a special class of fellows have been repulsed.

Today the BSA is perhaps best described in Professor John Barnes's words as "an association of persons interested in the study of society, irrespective of qualifications, even if most of the members do happen to have qualifications".

Having failed to become a certifying body (like the British Psychological Society), it occupies in a sense a less central place in the discipline than professional associations in other subjects.

In medicine, for example, the Royal Society of Medicine performs the role of a learned society bothering the cause of truth and promoting scholarship while the British Medical Association represents the collective interests of the profession.

Whereas tho British Sociological Association has failed to establish itself securely as a learned body and has, as John Barnes pointed out at Lancaster last week, "never recognized itself as having an association of sociologists in one form of employment only i.e. of academic sociologists and sociologists elsewhere in higher and further education".

Although the lay public has become an relatively insignificant category in tho membership, the association attracts sociology teachers in schools and increasingly sociologists working in government, commerce and industry.

With a membership drawn from such diverse backgrounds it is no wonder "perhaps not surprising that the association has never tried to negotiate with employers on behalf of its members".

Its lack of centrality has also been re-inforced by the fact that about half of the country's sociology professors are not members of the association.

Although the reasons for their absence are varied, some of the older generation of sociologists were alienated from tho association by its increasing democratization in the mid-1970's.

Many were also put off by the "Marxist intrusion" into the association in the late 1960's the arrival of the "CSE Marxists" as one senior sociologist put it following the boom in sociological student numbers at the time of the worldwide emergence of student radicalism).

Others more recently have been unhappy about what they see as the disproportionate influence of militant feminism. (A women's caucus was founded at 1979 when the association holding conference on Sex and Gender in Aberdeen).

Last week a new mood of confidence and maturity was abroad at Lancaster. Despite or more probably because of the external threats to the discipline's future, members seemed to have found a new unity of purpose that surmounts theoretical and philosophical differences.

After the "let a thousand flowers bloom, Thomas Kuhn" mentality of the past 15 years when cults like ethnomethodology, structuralism, ethnomethodology, etc) proliferated and fragmentation prospered as the discipline there is now what Professor John Rex describes as "a tremendous feeling here today that whatever people's political views there is (in fact) something called sociology".

Time to throw off the sexist strait-jacket

Unless e non-sexist sociology is developed as a matter of urgency the discipline will continue to reproduce ideologies which legitimate the oppression of women.

Professor Margaret Stacey, of Warwick University, told the conference it was time for British sociologists to extricate themselves from the conceptual straitjacket created for them by sociology's founding fothers.

The early male domination of sociological theory, she argued, led to exclusive attention being paid to affairs of state and the market, a focus which in the mid-nineteenth century were not affairs which woman, confined to the private domain of the home, were allowed to be concerned with.

These manifestations of sociological thought —in which the affoirs of tho public domain were addressed almost exclusively and the "activities" of the gender order wes assumed—had left the discipline with a continuing legacy.

"Errors of omission, accounts in which children and women are ignored and certain lock of fit between explanations hevo to be large extent arisen becauao . . . gonoral oociological theories were onunciated by men and focused on the public domain.

"They constitute a straitjacket in which we are still imprisoned and within which attempts to understand the total society are severely constrained", she said.

Sociologists lacked a conceptual framework, let alone e theory with an explanatory power, which permitted them : to analyse paid and unpaid labour : to encompass the domestic sfyere as well es the market-place ; and which could rolate class and gender both of which underpinned the division of labour.

Danger of arrogance

Sociologists should adopt a humble, tentative stance when offering interpretations of social reality, otherwise they may find themselves accused of being pretentious and arrogant.

Professor Caroline Cox of Chelsea College said sociologists had much to offer practitioners in the field of health care but they often did discredited themselves and failed to make their contributions effectively.

Certain developments within sociology had made some of its work appear ridiculous, she said. Others had made sociologists appear "intolerably arrogant or irresponsible".

While there were many members of the profession who were committed to traditional academic criteria, there were others who rejected such criteria.

"If sociologists are to operato under the aegis of the academic community," she said, "they must accept to abide by its epistemological and institutional principles : they cannot reject these and set themselves up as the new Common high priests of society, expecting everyone to worship at their feet."

One of the most important developments in the history of the discipline was the explosive growth of sociology departments in the 1960s and the associated explosion in academic posts, especially in the polytechnics.

This phenomenon, said Professor Cox, had been premature. It had occurred on too flimsy an epistemological base and had generated a great deal of academical shoddy work which discredited the discipline today.

Relationships deteriorating

The deterioration of relations between sociologists and the Social Science Research Council was made painfully clear at the conference when Professor John Eldridge, the BSA's president, accused the council of succumbing to increasing Government interference.

In his presidential address he said that a growing number of research applications were being forwarded from the SSRC to the Department of Education and Science for screening often without applicants being informed. The council was in danger of becoming "engulfed in the matrix of civil service and government".

"The Social Science Research Council is an institution that has lost its way and is wracked with internal problems, with a demoralised staff and facing pressure from successive governments to justify itself", he said.

"I have considerable sympathy for those who work for the SSRC but I think their position and that of academics has not been helped by indifferent leadership in recent years", he said.

Professor Eldridge also launched a blistering attack on the SSRC's decision to scale down the proportion of its funds allocated to postgraduate studentships.

But Professor Eldridge's criticisms were counteracted by equally blunt remarks the following day when Mr Michael Posner, chairman of the SSRC, told delegates that sociology represented only 10 per cent of the council's budget and was therefore important but not indispensable.

Suspect clauses of the Justice Bill: a time for caution

Traditionally, English MP's do not speak on Scottish matters. The Commons have returned this week with many flowing convention by joining in the long and vigorous debate over the Criminal Justice (Scotland) Bill.

The precedent was set by academics. Both Scots and English professors and lecturers are spearheading the Campaign to Stop the Criminal Justice Bill. This umbrella organization, which includes lawyers, trade unionists and civil rights groups, has among its sponsors Professor Neil MacCormick of Edinburgh University, Professor Stuart Hall of the Open University, Professor Ian Willock of Dundee University, social historian E. P. Thompson, with Mr Richard Kinsey of Edinburgh University's law department as chairman.

Many of the Bill's 80 clauses are uncontroversial or generally welcomed, but some, particularly those on police powers and judicial examination, are strongly opposed.

The Bill's opponents do not all share the same view on all the clauses, and no part one, which abolishes with police powers, has been the most vociferously opposed as it obtains maximum agreement from the various factions.

Proponents of the Bill have not been forthcoming from the academic sphere. But Scotland's chief prosecutor, Lord Mackay, the Lord Advocate, says: "In the debate on this Bill in the media, perhaps undue emphasis has been placed on the first three clauses, and that's a pity because there's a lot of very good material in other parts of the Bill."

Not even the Bill's most vehement critics decry the plans to speed up and improve appeal procedure, or to give the defence access to statements by Crown witnesses, or to allow the defence to plead that there is no case to answer without jeopardizing their position (at present, if the plea is not sustained, the defence loses the right to call witnesses and lead evidence).

Lord Mackay remarks that although the campaign is to stop the Bill, it is only devoted to stopping the earlier clauses—and that the slogan was coined before the campaigners ever saw the Bill.

Certainly the campaign was first launched in response to the Labour Criminal Justice (Scotland) Bill which fell with the last government in anticipation that the Tory Bill would be a repeat performance. Both Bills were based on committee of inquiry reports, notably the Thomson Committee's three reports

on criminal procedure and criminal appeals, but opponents maintain the Tory Bill goes far beyond the Labour one in its threat to civil liberty.

Mr Kinsey points out that parliamentary questions asking for a green paper before its publication were countered by the Government's saying it was unnecessary as there had been enough public debate already.

Under present Scots law, the police must be able to show reasonable grounds for charging a person with an offence. In England and Wales, the police may take someone into custody for questioning by arresting him to obtain evidence, and, unlike Scotland, it is not necessary to charge him immediately on arrest.

In Scotland; therefore, if the police wish to question someone but have no concrete evidence, they often resort to bluff by "inviting" him to the police station, without his being told that he is fully entitled to refuse, or may leave at any time. People are often held to "help police with their inquiries" in a procedure recognized by the police and the Scottish office as strictly illegal.

It has been argued that the Bill legalizes present malpractices by introducing the new concept of detention without arrest, where the police have reasonable grounds for suspecting that the person has committed an offence. He can be detained without being cautioned or charged for up to six hours during which time he may be questioned searched and fingerprinted, although the prints must be destroyed if there is no subsequent charge or conviction.

There is much concern that the Bill is not defined clearly enough and that these powers will be abused. Jurisprudence professor Ian Willock says the police will continue to use their own methods of persuasion to detain a suspect, be they threats or blandishments.

Opponents are also concerned that the Bill does not change the present position where there is no police complaints board in Scotland, and all complaints are dealt with internally.

A major criticism is that the Bill does not define when detention starts.

Under English law, if police suspicion crystallizes during questioning of a suspect, they are obliged to stop, administer a caution and charge him. Mr Kinsey is concerned that there is no such criterion in the new Bill.

Professor MacCormick sees the Bill having a far-reaching effect on the relationship between the police and the community.

"This Bill increases the state's power of compulsion over the citizen and is inimical to voluntary cooperation with the police."

The Bill also requires witnesses and suspects to give their names and addresses to the police. Initially, it gave the police power to detain while this was checked, but this was removed in the House of Lords debate.

There are also stop and search powers if the police suspect someone of carrying a weapon. "It is certainly the case that in the west, particularly in Glasgow, there is a problem with offences against the person" says Mr Kinsey. "But giving the police wider powers, probably with the best of intentions, isn't going to help. There is a danger of utterly alienating the kids or actually provoking a perverse bravado of carrying a weapon."

Professor MacCormick sees the risk of police over-using the power on young people. But he also recognizes that its exercise may discourage people who otherwise feel obliged to carry a weapon for their own protection and thus reduce the numbers of weapons carried.

There is also concern that the Bill has implications beyond Scotland. Scottish police powers, at present less than those in England, are believed by some opponents to overtake them in the Bill. Many see this as an attempt to pre-empt the Royal Commission on Criminal Procedures which is expected to report in the autumn, particularly on pre-trial procedures and police powers in England and Wales.

Under the Bill suspects may be detained without being cautioned.

Professor Stanley Cohen of Essex University says it seems that the Scottish police are being given powers which the more extreme English police have been asking for in vain. And Mr Kinsey foresees the danger of a spiral with Scotland and England being played off against each other to gain greater and greater powers.

But the Lord Advocate refutes the idea that Scotland is being used as a legal stepping stone.

"The English police have the power to hold people for considerably longer than six hours without the restrictions in our Bill. I don't really believe it's possible to say that the Scottish system with its detention powers will be more restrictive to the liberty of the individual than the present English system."

Mr Kinsey replies that the Scottish Bill does not restrict the police. "It is a substantial extension of the English powers of arrest, where three cautions must be given and questioning must stop when a charge can be made."

Another bone of contention is the judicial examination, where the accused with his solicitor, appears soon after arrest in front of a sheriff and is questioned by the Crown prior to a trial being initiated. This part of the Bill was considerably modified in the Lords, with a clarification of the right to silence.

"A person who wishes to remain silent throughout criminal procedure will not be disadvantaged by doing so", explains Lord Mackay. "But if he speaks or has evidence given on his behalf which he could have given in answer at the judicial examination, the Crown or judge may comment on this to the jury."

But Mr Kinsey feels the accused may be so confused, upset and disoriented at a judicial examination that he prefers to say nothing. "And he may remain silent if he doesn't know where he was six months previously, but can later bring evidence to prove an alibi."

Professor MacCormick is concerned that the defence has no right of questioning. He also feels there are pragmatic organizational problems. The already vastly overworked Glasgow sheriff court has the potential for 12 judicial examinations a day, with additional pressure on courtrooms, solicitors and shorthand writers. It could, he feels, lead to an enormous snarl-up in criminal courts.

Modifications to the Bill have already been made in the Lords, and everyone anticipates there will be further changes in the Commons. Lord Mackay looks forward to lively controversy, and has no chauvinistic dislike of English parliamentarians joining in.

However, Mr Kinsey still hopes more controversial clauses will disappear without trace.

He feels it would be unfortunate if the debate monopolized by academics and lawyers and centred solely on complex technicalities. "If this is allowed to happen, to ordinary people in the street it will appear to be in no more than a esoteric game. In fact, the issues are simple, and the consequences immediate."

Olga Wojtas
Scottish Correspondent

How Texas hopes to catch the sun

Science Correspondent Robin McKie talks to Houston scientists about their research into harnessing solar energy through huge collector satellites

In a world facing a future of desperate energy shortages, all possible power sources are likely to be the subjects of increasingly intense and serious scrutiny. Among the likeliest contenders, solar energy stands out as a particular favourite. Its proponents argue that when properly developed it should provide plentiful cheap power in a safer, cleaner fashion than present nuclear or coal generating stations.

There are drawbacks in attempting to achieve this goal. For one thing, sunlight arriving on the ground is a rather feeble energy source and is difficult to convert economically into electricity. Also it can only be gathered during daylight hours.

One possible solution to those problems, is now being investigated at Rice University, Houston, in the United States, where researchers are investigating an energy programme on a typically grand Texan scale. They envisage an array of massive solar energy collector satellites parked in geosynchronous orbit beaming down power to ground stations.

The satellites would remain above the same spot on Earth at all times and would convert solar energy into microwave radiation, beam those microwaves down to receiving antennae on the ground which would convert them into electricity.

Such a system has several advantages pointed out Professor John Freeman, head of the university's space physics department. The satellites would be in constant sunlight and would provide continuous energy, unlike ground systems which would be shut down at night and during cloudy periods.

Professor Freeman, who is also director of the university's space solar research programme, added that the five fold increase in solar radiation outside the Earth's atmosphere would allow a significant reduction in the sizes of the energy collectors.

However, even with this reduction, solar power satellites would be massive objects. Each would be about 18 square miles and the ground-based receivers would be even larger—about seven square miles.

But Professor Freeman is convinced that such a project is now within man's technological capabilities although construction would have to wait for the first development of America's reusable spacecraft, the Space Shuttle, which is now scheduled for first launch next year.

He envisages that by the 1990s or the early 2000s, a series of solar power satellites would be built in orbit, using a team of about 500 construction workers who would live in space. About 30 satellites would be built, eventually generating about 1,500 billion watts of power—about 20 per cent of the energy needs of the United States.

Development costs would reach about $80m for the first satellite, with the remainder each costing about $12m. In all, the project would cost about $80,000m just to get started, with further construction and maintenance costs being involved.

It is estimated that one 5,000 megawatt generating station would require about 200 flights of a heavy-lift launcher and once constructed would be blasted from low-earth orbit into a high stationary position above the Earth using a specially developed electrical propulsion system.

But the plan requires no new major developments in existing space technology, only a commitment to a massive organizational and financial undertaking. "I would not be surprised if history looks back on this effort and says this is a major development in man's collective use of intelligence", Professor Freeman said.

At present, $100,000 is being provided by Rice University and $200,000 from Houston's Brown Foundation to promote a multidisciplinary investigation into the potential of solar power satellites. This will consist of representative from a variety of faculties including humanities, sciences and engineering.

In particular, the environmental impact of the scheme is being thoroughly scrutinized by the researchers. Indeed, this is a major criticism of the project for many people fear that such irradiation of Earth and its atmosphere by intense, energetic microwave radiation could cause critical alterations in the planet's ecological balance.

Although the system as envisaged would prevent leakage of radiation into the atmosphere exceeding present United States federal guidelines and would also incorporate a fail-safe mechanism which would defocus the microwave beam if it slipped off the receiving antenna target, there are other problems.

For one thing, microwaves could cause serious overheating in the Earth's protective ionosphere layer and there is also a shortage of research into the effects of long-term, low-level micro-radiation.

But Professor Freeman said the solar power satellites would not increase significantly the present levels of microwave radiation in the atmosphere. "Put it this way, if we find that the amount of radiation is harmful, we are already in deep trouble", he added.

However, the major hurdle facing the establishment of the satellites is their likely financial prospects. At present, it is estimated that they could produce electricity at a cost of about 5.5 cents a kilowatt-hour, compared with the 3.5 cents a kilowatt-hour which is given as the present price of generating electricity.

Professor Freeman: convinced of project's capabilities

Social problems will also have to be considered. How will people react to large stretches of country-side being taken over by giant ground stations? What will be the international reaction?

In general these issues imply that the United States Government will have to play a major role in setting up the project, if it is found to be feasible. It is to this last goal that Professor Freeman's team is working and will ultimately report to the National Aeronautics and Space Administration and the U.S. Department of Environment.

Peter Wallington explains the legal background to an embarrassing question for the Government: is our new line on foreign students in breach of the Race Relations Act, and if so, what is the way round it?

How the policy on overseas fees bends the law

The implementation of higher fees for overseas students has produced many problems for the universities. Happily, until now, these have not included court actions under the Race Relations Act. But it seems likely that unpublicized changes in DES arrangements for the new fee levels which start in the autumn will open up substantial possibilities for litigation. Universities are beginning to realise that not the least of the problems that will face them shortly are the uncertainties and possible disputes that will arise from new ministerial dispensations. Much of the difficulty revolves around the distinction between actual residence and "ordinary residence"—which may appear to be an arcane point even for a lawyer, but in fact masks a critical change in the rules defining overseas students.

In this article, I shall examine the legal background to the present situation, and the difficult questions which universities, and quite probably the courts, will have to resolve. Other higher education institutions will face similar problems, especially on the definition of "overseas students" but because the legal framework is different I shall concentrate on the universities.

When discriminatory fees were first introduced in 1967, there was no legislation on racial discrimination in education. The Race Relations Act of 1968 made it unlawful to discriminate in the provision of educational services. But it was only discrimination on grounds of race, colour, national or ethnic origin that was prohibited. There was no restriction on practices which had indirect discriminatory consequences, as was established by the House of Lords in a case involving a housing authority which adopted a policy of discriminating against those who were not United Kingdom citizens. Universities have never sought to charge higher fees on the basis of race; their rules, related to length of residence in the United Kingdom did not fall within the scope of the Race Relations Act.

However, matters changed when the law on racial discrimination was extensively revised, with the adoption of some of the American anti-discrimination provisions, in the Race Relations Act of 1976. This Act introduced for the first time the concept of indirect discrimination. This concept effectively provides that the imposition of conditions or restrictions which are discriminatory in their effect may be unlawful even if there was no intention to discriminate, unless the requirements can be justified independently of the race of the individual, who suffers the consequences. Thus, for instance, a refusal by an employer to employ practising Muslims, or the imposition of language tests, or even IQ tests which could be shown to have an inherent racial bias, would constitute discrimination unless the requirements could be justified on a job-related criterion.

The 1976 Act applies equally in education, and it would be indirect discrimination for a university to impose a requirement, such as a period of residence in the United Kingdom, which considerably fewer people of, say, United States origin could comply with than could those of United Kingdom origin—unless the university could justify the distinction irrespective of the race of the individuals concerned. It would be difficult to sustain such a justification.

It was no doubt appreciated by the DES that universities would be exposed to allegations of indirect discrimination if higher fees for overseas students continued. Rather than adopt the logical implication that discrimination contrary to the spirit of the Government's own legislation should be stopped by abandoning the discriminatory fees, the Government included in the 1976 Bill a special provision to allow for discriminatory fees to continue. Section 41(2) of the Act says that "an act whereby a person discriminates against another on the basis of that other's nationality or place of ordinary residence or the length of time for which he has been present or resident in or outside the United Kingdom" is not unlawful if it is done "in pursuance of any arrangement made . . . by or with the approval of . . . a Minister of the Crown". It can be seen that this provision was almost tailor-made to cover the universities, and in due course the Secretary of State for Education issued formal "arrangements" to secure exemption for the universities. These arrangements permitted the charging of higher fees to students who were classified "overseas students" that those charged to "home students". The amount by which the overseas fees were permitted to exceed the home fees was subject to a maximum set out in the arrangements, which coincided with the DES recommended fee differentials. The first arrangements were for the academic year 1977-78 only, but new arrangements, with new figures appropriate for changed fee levels, were issued for 1978-79 and 1979-80.

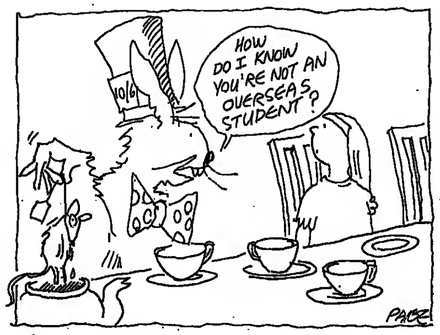
The major difficulty with these arrangements from the point of view of University Admissions Officers has been the definition of "home" and "overseas" students. The definition adopted by the DES was rather different from that which it had earlier offered as guidance when the distinction between home and overseas students was first introduced—and different again from the definition of "home students" in the regulations for student grants.

The guidance issued in 1967, apart from a number of "special cases", was based on whether the student had been "ordinarily resident" in the United Kingdom during the three years prior to the start of his course. Periods on a course of higher education were to be disregarded—so time spent on an undergraduate course would not qualify a student for the lower fee level for his postgraduate studies. But time spent in secondary or non-advanced education was to be counted as "ordinary residence".

Under the new 1977 arrangements, in contrast, a student could qualify as a home student either by having been actually resident in the United Kingdom during the preceding three years (allowing for up to nine months' absence for holidays, etc), or by having been "ordinarily resident" throughout the period of three years. In such cases, the period taken for the assessment of residence was to be the period immediately before any period spent on a course of higher education.

The differences in these two tests caused few major problems in practice. Universities generally continued to apply the 1967 criteria. Once residence for educational purposes is specifically taken account of, it is difficult to think of many cases where a person would be actually resident without being ordinarily resident. It probably did not occur to universities to make the distinction—actual residence was enough. This meant that no student would be wrongly categorized as "overseas" when not within the definition in the 1977 arrangements.

Because of the special provisions in the 1967 guidance, some students, for example, those who had lost resident status because of their parents working abroad, paid home fees although the arrangements (for technical legal reasons) classified them as overseas students to whom higher fees could lawfully be applied. But it did not matter if the university erred in favour of individuals. They would not complain; the fee differential was modest; and those charged the higher fees could not complain of discrimination because of the arrangements.



A lawyer might say at this stage that all this is relatively straightforward, although the baffled layman or university administrator might demur. Since February 1 all this has changed. A familiarity with *Alice in Wonderland* is strongly recommended to those who wish to read on.

"On February 1, 1980, the DES sent out new Ministerial Arrangements to all Universities to apply to students starting on courses in or after September, 1980. I intimate that the old arrangements only applied to the academic year 1979-80, and it was not until the beginning of April that further arrangements were issued to cover, in the same format as the earlier Arrangements, students continuing in courses that extend beyond the present academic year."

The new arrangements adopt a novel, indeed startling approach. No longer is exemption extended simply to fees which are higher, but not too much higher, then permitted home student fees. Exemption from September 1980 applies only to fees of £2,000 or more (but not more than £7,000) a year for a course. £2,000 is the lower of the minimum "full-cost" fees recommended by the DES. Universities are under considerable financial pressure to comply with the minima, but it will come as a surprise to many to realise that there is also a legal sanction. A university which charges overseas students a fee which is higher than the fee it charges home students but lower than £2,000, will have no legal protection from claims of racial discrimination. But if it charges £2,000 or more, then the Ministerial Arrangements will give it the same legal immunity as before.

Surprisingly, the new arrangements—a formal legal document drafted, one hopes, with some care—make no reference at all to part-time courses. In the past, this has presented no problem, since charging pro rata higher fees for part-time overseas students was as much within the dispensation as charging the full differential for full-time overseas students. But now any longer. The effect of the new arrangements is that universities, discounting the rather improbable prospect of a fee of £2,000 for a part-time course—will have no legal protection against claims by students if they charge more to overseas part-time students than to home part-time students.

I have served until last the most surprising and puzzling change in the dispensation. This is a change in the respective definitions of home and overseas students introduced in the Minister's Approval of February 1 and applying to students accepted on or after that date. This change applies equally to other sectors of higher education, and will cause similar problems—though, since in practice it is postgraduate students whose position will be the more difficult, the universities will experience proportionately the more difficulty.

It must be unique that the legal status of a student, and his liability to fees, will differ according to whether he was "accepted" before or after an arbitrary date part-way through the normal admissions cycle. It is not even clear, in the absence of any decided cases on the point, at what stage in the admissions procedure a candidate could be said to have been accepted by a university (or a polytechnic). This is especially so in relation to undergraduates, who may have been made a conditional offer before February 1, but will not be accepted unconditionally until the result of their examinations is known; or may have provisionally accepted a place offered by the University but not firmly accepted it. (On ordinary legal principles, a contractual offer by the university would not be considered to be accepted until the applicant had given an acceptance which he could not unilaterally withdraw, though the offer might be conditional.)

The actual changes in the definitions of home and overseas students are almost as surprising as the fact that the change has been made half way through the admission cycle. Qualification by normal residence in the United Kingdom disappears, as does the exclusion from calculation of years spent in higher education. The new test is whether the individual will have been ordinarily resident in the United Kingdom for a period of three years immediately preceding the start of his course.

It is not clear whether the DES appreciated that people spending three years in the United Kingdom reading for an undergraduate degree could be said to have been "ordinarily resident" in the United Kingdom during this period. This possibility is however a real one. Unfortunately, however, the only way that universities can find out whether that is so, and thus whether the words do mean, is to wait to be sued by a student who claims that he has been wrongly classified as "overseas". For those universities which simply continue (as many will be tempted to do) to apply the 1967 criteria, there is a real danger that students proceeding from a United Kingdom undergraduate course, faced with a decision involving perhaps £1,500 or more a year in additional fees, to which they may not be liable, will sue. Equally, universities cannot afford to be too cavalier about giving the benefit of the doubt to students now that the fee differential is so great. Applying the 1967 criteria, an undergraduate from overseas coming straight from school in the United Kingdom or an A level course at a College of Further Education would be able to count his period as qualifying towards ordinary residence. If the DES view of the meaning of ordinary residence is not wholly unqualified form is correct, such students may be overseas students, to whom higher fees may (but not must) be applied. Where this line to be drawn depends on the meaning of the words "ordinary residence".

The words "ordinarily resident" are familiar to lawyers; they appear in a number of legal contexts, of which the most important are the income tax legislation, and certain provisions of immigration and nationality law. In the absence of any indication to the contrary, it can reasonably be assumed that the same meaning will be given to the words in the new context.

Courts have repeatedly held that the question whether someone is ordinarily resident in a particular country is a question of fact, and the facts of each individual's life history are inevitably so different in detail that this is an area where it is particularly difficult to generalize. It is not easy to draw comparisons between the decided cases on the lifestyles of tax exiles and the typical circumstances of overseas students. (The leading case under the Income Tax Acts concerned a man who lived in Monaco and came to Britain for five months each year staying in various houses during his visits; his incidentally was held to be ordinarily resident in the United Kingdom for tax purposes.)

The limited guidance given by case-law suggests that if a person is actually resident in the United Kingdom for a period, and his presence cannot be categorised as "extraordinary", then he will be regarded as being ordinarily resident here. This kind of test seems not to have caused too much difficulty to Local Authorities deciding whether an individuals are entitled to mandatory grants, but it is likely to cause rather more difficulties for universities.

Even a requirement of a degree of permanence in a person's residence in the United Kingdom seems well be satisfied by a student who has already spent the last three years in the United Kingdom as an undergraduate student, proposes to spend the next three years as a postgraduate and intends to stay on in the United Kingdom after he has bee completed his research. If the DES's calculation of the amount of money that can be deducted from the universities' grant to cover the alleged subsidy to overseas students assumes that such people will still be regarded as overseas students under the new arrangements and if—as must be possible in a number of individual cases, even if not in most—this assumption is wrong, then universities have been cheated out of more money than even on the Government's official announcement should have been the case.

In the case of 1980 admissions the position is complicated even more by the bizarre circumstance that a student may be liable to be lower or higher fee according to whether his University incorrectly, admitted him before or after February 1.

More complications arise for those students who will be coming into their studies in a particular university, but transferring from one course to another. If there is a clear break between courses, the student concerned will have to be considered for fee purposes on the new criteria—which may or may not be more favourable to him according to the circumstances. If one the other hand, he continues an existing course but his department registration is transferred on acceptance, the student originally admitted for the MPhil may be allowed to proceed to PhD after satisfying the usual preliminary hurdles) then the classification is probably unaffected (because he changes his registration.

Universities are entitled to a full explanation from the DES of exactly what it is seeking to achieve by the changes in the classification of overseas students and what, if any, guidance it proposes to give on the many unanswered questions raised by these changes. Applying the 1967 criteria, the

Teaching the Poms a lesson

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grammes implied by the projections

After considering this advice the minister announces government policy and issues guidelines to the TEC on the number of students in university and advanced education and general policy on enrolments in TAFE, financial grants for the next triennium and the distribution of recurrent and capital grants to the three sectors. The guidelines may specify government plans to increase education and training in particular fields or to reduce it in others.

On the basis of these guidelines the TEC prepares more detailed guidelines for the three councils. It is an important feature of the TEC that it can accommodate councils with different functions and procedures.

The Universities Council operates in much the same way as the UGC, except that it deals with only 19 universities and consults state authorities on the relations between the plans for university and advanced education in the state, and recommends capital and recurrent grants for each university.

The Advanced Education Council also recommends capital and recurrent grants for approved programmes in each college—73 were listed in the recommendations for 1979, and further amalgamation will soon reduce the number below 70—but it acts very largely on the basis of submissions made by the state authorities for their colleges.

The TAFE Council recommends capital funds for named projects submitted by state departments, and general recurrent and special purpose grants to the states for TAFE activities.

The appropriate degree of specialization and division of labour between the sectors varies between the densely and sparsely populated regions. For this reason country colleges of advanced education may be financed by state governments to provide some TAFE courses, and TAFE colleges in regions where there are no universities or colleges of advanced education may be financed by the Advanced Education Council to provide some advanced education courses.

The existence of the TEC has facilitated such "contracting across sectors". The Williams Committee recommended an extension of such contracting — the universities which were very likely to come before on economical size. The University of Tasmania recently agreed to undertake some undergraduate courses in the interests of more rational division of labour between the University and the College of Advanced Education now centred in Launceston.

The provision for councils with different responsibilities and different degrees of contact with the institutions funded by them seems feasible to adapt the Australian model of a TEC to the different conditions in Britain.

The Australian TEC is concerned with all postsecondary education. There is a good case for a similar approach in Britain: there are close links between advanced further education and further education, in the interests of a balanced programme of education and training it is important to consider the flow of school leavers into employment and part-time further education (as in trade training) as well as the flow into full-time, sandwich and part-time higher education, and in many occupations with a tradition of on-the-job training complemented by evening courses at "technical" there is a growing need for full-time pre-employment training and/or full-time block-release periods of training in FE colleges.

The biggest single problem in establishing an effective Council for Post-Secondary Education is the current complexity and instability of advanced education in the public sector. Although most public sector advanced education is provided in institutions owned and financially aided by LEAs there are also other institutions mainly grant-aided by the DES and LEAs institutions (such as the inner London polytechnics), assisted by LEAs and institutions financed directly by DES.

The public sector of higher education is both institutionally complex and unstable. In 1967, 30 polytechnics were established to provide the basis for a binary system of higher education. Then following the 1972 White Paper the role of the teacher training colleges was changed when it was decided to integrate them with the rest of the higher education system. Some of these colleges were amalgamated with universities, some with polytechnics and other existing colleges, and some were reorganized as free standing institutions of higher education. The DES expects that by 1981 there will be in England and Wales alone 30 polytechnics, 67 colleges with more than 90 per cent of advanced work, 37 colleges with between 90 and 30 per cent of advanced work, and 264 colleges with less than 30 per cent of advanced work.

The present arrangements for financing advanced further education and for ensuring an adequate range of courses and places in them without excessive costs are not satisfactory. Some of the major deficiencies were outlined in the report of the Oakes Working Party.

The problems of establishing an effective Committee for Advanced Education (CAE) are so great that it might be wise to move to a Council for Post-Secondary Education (CP-SE) by stages—to establish the CAE as a first step and, as proposed by the Oakes Committee, to arrange for the UGC and the CAE to coordinate development plans on a voluntary basis for the time being.

A CAE could not be effective without major changes in the finance of the maintained institutions and without the creation of financial formula and procedures that would make possible an efficient allocation of resources to maintained institutions, assisted institutions (such as the inner London polytechnics), and the direct grant institutions, and the finance of advanced education courses in predominantly further education colleges.

The pre-condition of major reform is the formulation of cost norms which would reflect the costs of providing the various types and levels of courses in standard institutions and the cost variations due to size factors.

To avoid the risks of undue centralization it would be wise to provide for financing to be shared between the maintaining authority and the CAE. Formulae to make the allowance for each maintaining authority's capacity to pay for the approved programmes in its institutions, the percentage shares would have to be adjusted by the CAE on the basis of targets approved by the secretary of state.

Tuition fees provide a significant fraction of the income of institutions in the public sector. It would be somewhat easier for the CAE (as for the UGC) to establish efficient methods of allocating finance if fees reflected in some measure costs of providing the different courses of study. In Australia tuition fees (which did not reflect relative costs) were abolished in the expectation that educational opportunities would be increased. The main effect of the abolition, coming as it did at a time when the University Commission was moving to a great increase in that loan account the standard costs of different courses, the student mix, the size factors, was to make it easier for the commission to make a rational allocation of resources.

To reduce the risks of undue centralization and the consequential applause at the centre and anxiety at the extremities" as Lesky put it, provision could be made for submissions from the LEAs for their colleges and from the other institutions, in some cases through the Regional Advisory Councils.

The public sector of the binary system was created without traditional and other ideas the DES. It is certain that the creation of a Committee for Advanced Education and a Further Education Committee (FEC) alongside the UGC, and an umbrella Council of Post-Secondary Education, would ensure a better outcome than could be achieved by the DES. In particular, if the basis of financing the public sector were changed, could the DES produce an adequate 10 year plan to guide the developments of the public and autonomous sectors?

The DES has some major achievements to its credit such as the generation of the binary system and the expansion and effective response to the marked decline in the demand for new teachers. Had there been a national body for the public sector with the sort of membership proposed by the Oakes Committee, it is unlikely that the response to the population shift would have been half as resolute as that organized by the DES.

The case for creating a CP-SE, a CAE and FEC, to complement the UGC is that:—

- in the 15 years since the creation of the binary system, the DES has failed to establish an adequate system of forward planning and financial discipline.
- because of its relations with other departments and responsibilities to the secretary of state, the DES does not have the freedom of publication and public advocacy as would a CP-SE.
- a CP-SE with committees would be in a better position than the DES to provide a variety of planning and administrative procedures to match the different nature of the three sectors.

There is on balance I think a good case for establishing a CP-SE to make projections of the need for places, and the type of places, in post-secondary education on the basis of specified assumptions about movements in population, GNP, and policies on access to education (including grants to students and the conditions of education leave), and to outline courses of action.

After consideration of the CP-SE projections (which would be public), the (not so public) proposals by the DES, and political objectives and pressures, the secretary of state could inform the CP-SE of his general policy and the resources to be made available to give effect to that policy. The CP-SE would then be in a position to provide the three councils (whose presidents would be ex-officio members of the CP-SE) with planning guidelines.

The UGC would then proceed as now to discuss the implications of these guidelines with each university, to appraise the quinquennial submissions, and to decide the recurrent and capital grants.

The CAE would inform the Regional Advisory Councils, the local authorities the direct grant and assisted colleges and polytechnics, of the planning guidelines. Those guidelines would indicate plans to increase or reduce the number of places in those fields of study where explicit manpower planning made sense, a general indication of the direction of change in the number of places in the region and any changes in the balance of subjects and levels of study assumed in financial plans, and the approximate levels of matching grants or direct grants to be taken into account when making proposals for the next financial period.

In developing a planning and control system for higher education in the public sector, the planning and control provision for the 30 polytechnics which account for about 55 per cent of all full-time equivalent students in advanced courses would be critical. For the major polytechnics at least the CAE would need to approve a general academic and financial plan to be followed.

There are more than 250 colleges with less than 30 per cent of advanced work and with predominantly part-time and evening students. For the most part local control and initiative is particularly appropriate in this sector but there is a more general problem arising from the role and the potentially greater role of the sector in vocational training.

One of the responsibilities of the CP-SE would be to keep under review the flow of school leavers into part-time education associated with employment and to appraise the effectiveness of the training.

Changes in industrial structure and in the average age of school leavers have created a situation where there is a need to increase the role of FE colleges in full-time pre-employment training. A further education committee of a CP-SE could play an important part in expediting overdue reforms.

No committee of higher education or council of post-secondary education could improve matters unless the members of the council and its committees have a capacity to analyse the problems and suggest sensible solutions to them. In recent years there has been a tendency to be guided by displaced democratic philosophies and to appoint representative rather than expert committees. The sensible thing is to appoint members who understand the vested interests involved but, first, not committed to further protect them.

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State subsidy is the arts' best friend

The arts in Britain face a difficult period over the next few years, dependent as they are to a great extent on public subsidy. The plea that support for the arts should be exempted from the general cuts in public expenditure, which are a central feature of the Government's economic strategy, has been rejected. The present Minister for the Arts, Mr St John-Stevas, whose dedication to the arts is unquestioned, has fought a gallant fight to preserve real growth in state support but failed to carry his Cabinet colleagues with him. He has, however, managed so far to protect the arts from the worst of the cuts imposed on many areas of public expenditure and for this the art world is grateful.

The Minister has said, in effect, on a number of occasions in the House of Commons and in public platforms, that the arts must look more and more to private and business sponsorship for support and that, while Government will do its best to maintain existing levels of subsidy, growth must come from private sector sponsorship. Though this is a development of one strand of Conservative party thinking even before the General Election, similar thoughts were voiced a few years ago by a Labour Minister for the Arts, Mr Hugh Jenkins. My purpose is to show that such a policy is little more than a pipe dream, and that even were it to succeed to any significant extent it would spell danger to the arts in Britain.

Before entering on this proposition it may be useful to reflect for a moment on the state of the arts in this country today. At a time when our economic performance is dismal, when our influence and power in the world continue to diminish, and when we are grappling with intractable problems of inflation and industrial strife, the arts in Britain flourish as seldom before in our history. London is rightly regarded as the musical capital of the world. We enjoy a greater variety of art exhibitions than almost any other city. The audience for live opera in Britain has been at least trebled in the last 20 years, and more recently there has been a comparable explosion in dance. There is a network of regional repertory theatres has been established, the extremely successful National Theatre has been launched, the Royal Shakespeare Company has expanded in both Stratford-on-Avon and London and acquired a world-wide reputation, and a host of experimental and fringe drama companies have been launched and maintained. Little of this achievement would have been possible without state subsidy, mainly channelled through the Arts Council which hitherto has enjoyed generous support from successive Governments and been enabled to finance great growth in every aspect of the arts.

The Arts Council's grant-in-aid for the financial year which ends next March is around £3m. Thus even if support were to double in the coming year it would not amount to more than a 5 per cent cut in the Arts Council's grant-in-aid. In fact, it is there likely to be a doubling of business sponsorship. Though more firms are beginning to show interest, profits are generally being squeezed, the number of our clients is not, whether they will obtain free from source next year even as much money as they had this year is the scale of the problem.

Before enlarging on the scope of my misgivings, let me emphasize that the Arts Council welcomes business sponsorship wholeheartedly. I gladly echo the words of an earlier chairman of the council when asked about sponsorship from a source which some might regard as slightly illicit. He replied: "Sir, I become money for the arts from a source, mind-servers and rapists included." But were private sector sponsorship to match or exceed the volume public support through the Arts Council, the results for the arts themselves could be catastrophic.

The private or business sector is under a quite different kind of constraint. With a handful of honourable exceptions—Mark Spencer springs to mind as one firms look for some visible return for their investment in arts sponsorship. There is nothing discreditable about this end, since such expenditure must come under the heading of advertising to qualify for tax deductibility, it is wholly understandable. Shareholders are responsible that profits are distributed in this way at the behest of the chairman or board. But the public sector is that the majority of firms seek to support activities and prices which are safe, uncontroversial and "free from any glamorous and free from controversy.

Quite reasonably they do not wish to be associated with box office failure or involve themselves in unfavourable publicity. It should be added that there have been some examples of really imaginative sponsorship, particularly in the past year or two.

Where does this leave the Arts Council? At anything like present levels of private support, we have no anxieties whatever. But should the announced policy of the Government ever succeed to the point where the volume of business sponsorship approaches or exceeded that of public subsidy, the Arts Council would more and more find itself associated with support for the contemporary, the experimental and the controversial, and the exclusion of what is generally acceptable and would begin to be discreditably with the general public. This would be damaging to the Council's future and to the arts themselves.

Finally, the Arts Council does have a fair assurance of continuity of support, provided quality is maintained. Those who rely on business sponsorship can have no comparable assurance that support will be renewed from year to year. To sum up, business sponsorship is a most welcome supplement to state subsidy for the arts. It could never become a substitute.

The author is chairman of the Arts Council.

Talking the language of the linguists

Scholars in the humanities achieve a triumphant practicality in producing journals which play an important role in the study of modern languages and literatures, says John Cruickshank

It has been said of universities that their purpose is threefold: to discover, conserve and transmit knowledge. Discovery is associated with research, conservation with libraries, transmission with teaching. While the research function is recognized, funded and rewarded—some would say inadequately—those who facilitate research and provide for its diffusion often remain relatively unrewarded and unsung. In the field of the humanities such people are mainly, though not exclusively, those hard-working academics who produce and edit learned journals in addition to their more immediately identifiable responsibilities as researchers, teachers and administrators. It is a pleasure to be able to pay tribute to them.

The production of academic journals is the more interesting because of the premium which it puts, in difficult financial circumstances, on economy and improvisation. The balance between production costs and sales is all the more testing when subsidies are either very modest or non-existent and when circulation is severely limited by specialist appeal. The encouraging feature is the fact that amateurs manage to achieve such satisfactory results. This is on area where scholars in the humanities achieve a triumphant practicality.

Where the study of the arts is concerned academic journals obviously play an important role. Almost all carry a review section which provides scholars in the field with bibliographical information and expert assessment. A regular scrutiny of the "current periodical" shelves of the university library is a professional requirement for all serious academics. Furthermore, academic journals provide an outlet that is particularly important for young scholars anxious to see their first work in print.

Indeed certain modern language journals (e.g. *Italian Studies* and *German Life and Letters*) make it a part of their policy to encourage articles from younger contributors. Unfortunately, the gap between acceptance of an article and its publication ranges from 'one to three years, depending on the journal. This is due to financial constraints rather than to insensitivity or inefficiency.

Although modern language studies have been an established element in university curricula for very many years, the current modern language journals are mostly relatively recent in origin. An exception, and the senior publication by some way, is the *Modern Language Review* which was first published in 1905. It is a quarterly with a circulation of around 3,000 copies and has the advantage of being published by the Modern Humanities Research Association. I say "advantage" since the MHRA ensures its financial health thanks to funds which have been skilfully handled over the years. The MHRA makes a quite major contribution to research in the humanities and also publishes *The Year's Work in Modern Language Studies*, *The Slavonic and East European Review*, *The Yearbook of English Studies*, *The Annual Bibliography of English Language and Literature*, a "Texts and Dissertations" series covering the main European languages, and a number of individual scholarly volumes.

The *Modern Language Review* accepts articles on English, French, Italian, Hispanic, Germanic and Slavonic topics, with an editor in charge of each section. The general editor has his own allocation of space for articles and book reviews of general rather than sectional interest. Most issues contain 10 or more articles ranging from the Middle Ages to the twentieth century. In recent numbers there have been articles on the *Chanson de Roland* and *Sir Gawain and the Green Knight* as well as on Borges and Sartre.

Contributors include a full number of American scholars and this seems appropriate since the MHRA is very much an Anglo-American organization. The general tone of articles and reviews is one of high scholarship; the contribution to literary history is significant; the level of scholarship is impressive.

Another journal which deserves to be mentioned here because of its age and range is *Modern Language Review* dates from 1918 and is the organ of the Modern Language Association (founded in 1893). It differs somewhat from other journals mentioned since it is particularly concerned, among other things, with the gap between school work and university.

Both school teachers and university teachers are contributors, and the teaching of foreign languages is a main concern, though by no means to the exclusion of articles on literary topics. The main languages covered are French, German, Spanish, Italian and Russian, though interest is shown in other languages and a recent issue carried an article on Chinese. The circulation is again around 3,000 and the editor claims, with understandable pride, that the quarterly issues are read in 65 countries.

Three more recent journals with a multilingual character are *Forum for Modern Language Studies*, the *Journal of European Studies*, and *Quinquereme: New Studies in Modern Languages*. *Forum for Modern Language Studies* first appeared in January, 1965, from the University of St Andrews. Its aim and ambition was to cover "the intellectual languages and literatures of Europe and America during the past millennium". It noted the exposition of higher education which characterized the early 1960s and planned both to cover new trends in learning and to ease the frustration of a growing number of scholars lacking sufficient outlets for their work. It has published surveys of the date *present* type, and one of its most admirable and courageous features has been its welcoming of scholarly debate.

Forum for Modern Language Studies was conceived from the beginning as a meeting-place of learned disagreements such as that on the development of Arthurian Romance to the first number. Other distinctive features have included a "Research and Information" section (requests for information, discussion of possible research projects, short items of interest, etc.) and the publication of special numbers. The second issue, for instance, was largely devoted to Denis and his French to Corneille. Special numbers have subsequently been reissued as hardback volumes.

The *Journal of European Studies*, founded in 1971, reflects in many ways the changed attitudes to the study of literatures which emerged during the 1960s. This is the period of brave new academic ventures, the founding of the "new" universities, the re-drawing of the "map of learning", more particularly in the arts. Interdisciplinary studies were the order of the day, schools of European Studies rather than departments of modern languages were set up, for example, in Sussex and East Anglia.

It was from the inter university unit that the *Journal of European Studies* first drew its orientation and impetus. Its concentration on literature and intellectual history reflects its origins. With a circulation in the region of 600, it produces fairly regular special numbers under a guest editor. The current issue, for example, is devoted to literary and historical aspects of seventeenth century France. In general, one has the sense of a lively and enterprising editorial board.

Quinquereme is younger still, the first issue dating from January 1978. There are two issues in the year and costs are kept low by the use of camera-ready typescript and spiral binding. French, German, Spanish, Italian and Russian are the languages covered, the period is post-medieval, the aim is to publish articles on literary and linguistic topics, and "institutions" tend to be longer. Comparative studies are more welcome than forthcoming articles on a single author.

A representative selection of the latest books in a very wide field is reviewed and there is a section designed to encourage short notes, work in progress, and conference reports. This is a brave enterprise on the part of a group of scholars in the University of Bath; one is glad to be able to report that circulation is increasing slowly but steadily.

An ungenerous critic might be tempted to say that some of the journals mentioned so far have features of the rag-bag. Few potential readers are likely to be interested in all the major European literatures covered in any one journal, or in the various social, political, historical and linguistic specialisms. And yet, the multi-language journal encourages interesting possibilities in comparative and interdisciplinary studies denied to single-language periodicals.

But despite the growth of interdisciplinary studies in universities in the last 15 years, the vast majority of articles received by the multi-language journals remain of the single-language literary type—with a heavy additional emphasis on the twentieth century. This disappointing situation may be largely explained by the fact that the single-language specialist journals have to reject basically publishable material due to lack of space.

The proportion of material sent from the United States is roughly around one-third for many periodicals. As one might anticipate, however, the *Bulletin of Hispanic Studies* received two-thirds of its submitted material from America. Again, the number of articles accepted for publication varies from one to three in one is five. One has the clear impression that most aspiring young scholars still regard it as highly desirable that their work should first carry the *imprimatur* of the appropriate specialist single-language journal. To be published in such a journal is, if not to have arrived, to have given considerable guarantees of present seriousness and future promise.

The leading British journal circulating among French scholars is *French Studies*. It was founded in 1947 by Basil (now Sir Basil) Blackwell. Recent years have seen its quarterly issues rise steadily to a circulation of around 1,500. *French Studies* publishes scholarly articles and reviews in English and French and seeks a broad coverage of French language, literature and culture generally, including history and the fine arts, from the Middle Ages to the present. It is the official organ of the Society for French Studies (whose members are university (and some polytechnic) teachers of French in the United Kingdom and the Commonwealth.

French Studies is traditionalist, specialist and authoritative. There are no special numbers. Each issue gives half its space to four substantial articles and half to book reviews. Rigorous selection has reduced the gap between submission and publication of articles to something approaching twelve months. The reviews are an important feature and an admirable effort is made to ensure wide coverage while relating the length of a review to the importance of the volume in question. All books are not reviewed in strict order of major publications may benefit from a priority system. Something of the importance given to the review section is indicated by the fact that a special additional volume of almost 600 pages will be published this month in order to clear up a backlog of books published between 1974 and 1977.

Another specialist French journal, published regularly since 1962, is the twice-yearly *Nottingham French Studies*. This is a further example, as the name suggests, of scholarly enterprise on the part of a group of academics in one university. It owes its inception very largely to the vision and practical sense of the late Professor Lewis Thorpe and Mr John Chrisite. Around 300 copies are sold, but given the very modest price (£3.50 per volume of two issues) it is not surprising that the editorial board experiences some financial anxiety. There is no review section; the articles are aimed at specialists in each century from about 1550 to the present. The general standard is good, a genuine need is met, and a small group in the University of Nottingham earns the gratitude of colleagues further afield.

It would not be right to leave the area of French studies without mentioning a very modest but most promising publication dating from 1979. A Society for Seventeenth-Century French Studies was founded in 1978, has now held two annual conferences, and is served by an annual *Newsletter*. The first *Newsletter* contained 48 pages, the second 72 pages, and the third issue is already partly planned. Although limited to one century, the approach is resolutely broad and inter-disciplinary and has already brought together historians, art historians, literary specialists and others. Articles published so far include several on Madame de Lafayette (No. 1), several on the Fronde (No. 2) and such varied topics as "Style and Politics in the Age of Louis XIV", "Nationalism and French Domestic Architecture", and "Some Thoughts on Performing Lully's *Te Deum*". The *Newsletter* has been published with the aim of establishing a sense of community among scholars in this field. Inevitably, the journal carried regular lectures from various Spanish cities; indeed, the first letter from Madrid contained an eye-witness account of the coup d'état of General Primo de Rivera.

It did much to encourage general intelligent interest in the Iberian peninsula and originally did not seek "learned journal" status in the narrow sense of the term. During the Civil War it provided a systematic account of events, but it also issued important commemorative numbers containing specialist articles—on Lope de Vega in 1935, and later on San Juan de la Cruz (1942), Cervantes (1947) etc. The growth of Spanish studies in the United Kingdom and the developing interest in Portugal and Latin America, led to an increasingly academic emphasis following the change of title in 1948. The *Bulletin* now has more than 1,000 subscribers (well over half of whom are American); a useful and distinctive feature is the regular "Review of Reviews".

The Society for Italian Studies has published *Italian Studies*, apart from an interruption between 1939 and 1945, since 1937. It began as a quarterly, but since the resumption of publication in 1946 it has appeared annually. While it mainly carries articles on Italian language and literature, it also publishes work on history, art history and, occasionally, music. It has not had an easy existence financially, despite isolation from the tuition government and the British Academy.

Ideally, the journal would like to be able to devote more space, in the review section, to the discussion of major books. It has also been obliged, during the past five years, to reject all articles received from America and Italian scholars in favour of those from British sources. Only greater financial help can remedy this narrowness.

Finally, reference should be made to the *Slavonic and East European Review* which accepts articles on language, literature, history and general culture. It began publication in 1922 under the title *Slavonic Review* and appeared twice yearly. In 1970 it became a quarterly and expanded its title. The present circulation is just under 1,000 copies of which close to 800 are sent overseas.

Rather like *German Life and Letters* and the *Bulletin of Hispanic Studies* in their earlier manifestations, the original *Slavonic Review* carried comments on events in the Soviet Union in addition to more scholarly contributions. Its present field of interest is very wide and includes all the peoples who reside, or resided, within the territory of the Russian Empire and of the Soviet Union, or in Eastern Europe in a broad sense. This embraces all the Slav populations, and many others, including Hungarians, Finns, Mongols and Turkic peoples. Furthermore, the relations of all these peoples with the rest of the world are regarded as part of the journal's interest.

The gap between acceptance and publication can be as much as three years for literary articles (the majority of articles received by the journal) and rather less for articles on other topics. Something like half the total articles submitted come from outside the United Kingdom, more than half from the United States and Canada. There is an important review section which mainly covers scholarly works in English. Attention is also paid, however, to publications in other western European languages and to some from the Soviet Union and Eastern Europe.

Those various journals bear striking testimony to the existence, within a notoriously insular nation, of a serious and high-minded minority concern with foreign European cultures. They also reflect the work of individuals and organizations devoted to overcoming the British disinclination to learn foreign languages. The appearance of new journals in recent years might be thought to modify the widely discussed "crisis" in modern languages in this country. In fact, the roots of this crisis are to be found in secondary school level and are hardly affected by these journals.

In any case, the economically precarious existence which some of them maintain gives no cause for satisfaction. Indeed, conditions generally are more likely to deteriorate than to improve. Because academic journals in the humanities are part of our cultural life and manifestly do not contain material likely to affect the gross national product, they must struggle for survival. Yet the very reasons for their vulnerability provide the strongest grounds for their support and for our gratitude to those who ensure their regular appearance.

The author is professor of French at the University of Sussex.

BOOKS

In search of the lost generation

The Generation of 1914
by Robert Wohl
Weidenfeld and Nicolson, £12.95
ISBN 0 297 77756 4.

by John Cruickshank

The view that a particular generation possesses distinctive characteristics and shares common ideals has been used as a category of description and analysis by social, intellectual and literary historians. It has also been exploited for various political ends. So-called "generational thinking" increased in influence in Europe towards the end of the nineteenth century and began to wane as a concept in the 1930s. While the campus revolts of the late 1960s did something to revive the flagging fortunes of generational theory, it probably reached its culmination in the mid literature devoted to the "Lost Generation" in the years immediately following the Great War.

It is this "generation of 1914" which Robert Wohl examines in this original, informative and important book. He analyses its manifestations in five European countries—France, Germany, England, Spain, Italy—and his aim is to rescue it from "the shadowland of myth" and restore it to "the realm of history". In doing so, he displays a great deal of learning, much good sense, and not a little healthy scepticism. He wishes his book to be judged on "its ability to illuminate the politics of early twentieth-century European intellectuals".

Wohl contends that generations are made rather than born. They are a device used by intellectuals to conceptualize their society and possibly to influence and even transform it. A clear French example is the famous survey of youth opinion carried out by Massis and Tarde (under the pseudonym "Agathon") for the Paris daily *L'Opinion* in 1912 and published in 1913 as *Les Jeunes Gens d'aujourd'hui*. The authors attempted to show that a new and distinctive generation had come into being—a generation that accepted order and hierarchy, that replaced the fin-de-siècle dilettantism of its elders by choice and commitment. It was also a generation, Massis and Tarde claimed, that valued tradition, that accepted patriotism and Catholicism, that pursued austere morals and was attracted by right-wing politics. Viewed in terms of modern sampling techniques, the methods used in this survey leave something to be desired. It is also clear that the young men questioned by Massis and Tarde were a small elite of intellectuals, a section of bourgeois, conservative youth that was quickly losing faith in the Republic and moving in the direction of the Action Française. This "sacrificed generation" as Massis was to call it, amounts therefore to a very small and largely unrepresentative proportion of those who were to fight in the trenches between 1914 and 1918. What is most significant about *Les Jeunes Gens d'aujourd'hui*, despite its inadequacies, is the fact that it identified the term "generation" with youth and associated certain political ideas with concepts of youthful vigour, honesty and idealism.

A similar identification of "generation" with "youth" developed even more strongly in Germany—originally in terms of the small but influential *Wandervogel* movement. The *Wandervogel* regarded themselves as a separate age-group and a separate category of human beings and the only genuine source of cultural and moral renewal for the nation. Like so many of their French counterparts, they accepted the necessity of war. Of the 15,000 *Wandervogel* who went to war in 1914, barely one third returned alive.

In Germany the concept of necessary conflict between the generations, essentially between youth and age, was widely expressed and had already become a literary theme in the 1890s among such writers as Wedekind and Heinrich Mann. A violent generational rhetoric also characterises much Expressionist writing. However, whereas the French saw literature as the most accurate index of generational sensibility, the Germans sought its expression above all in political action.

After the war Ernst Jünger, who had fought in some of the worst battles, became the leading spokesman of the so-called "front generation". In spite of the fact that war had driven some of his contemporaries towards pacifism and others into the German Communist Party, Jünger appealed to ex-servicemen who were hostile to parliamentary democracy or industrial capitalism and who favoured an authoritarian state and the destruction of the Weimar Republic.

Considerable practical consequences were eventually to follow from the fact that while the French associated generations with "schools of thought", Germany turned to youth movements. Wohl lists three main characteristics of German writing about generations: "A tendency to view youth as a social category and a historical agent in its own right; an awareness that age-groups do not necessarily bloom into 'generations'; and a concern for the conditions under which a generational change produces a revolution in national life".

In discussing the outlook of the young Englishmen who went to war in 1914, Wohl turns to Vera Brittain's *Testament of Youth* as a classic of English "lost generation" literature. At the same time—and no doubt rightly—he finds this book rather too self-indulgent and self-pitying to be regarded as a really great work. What Vera Brittain makes admirably clear, however, is the general feeling of the British war generation that it had failed in its mission and that the survivors were too few and too dispirited to dislodge their elders from the crucial positions of power. It seems, indeed, that the term "lost generation" underwent a change in the British mind as the events of war began to recede. While for many this term meant a disorientated generation—disorientated by the terrible experience of war—for others it took on increasingly the sense of a missing or absent generation because so many of its number had perished between 1914 and 1918. Although Wohl himself does not mention it, there are those who have argued along rather similar lines that the Great Depression of mathematics in twentieth-century France, for example, was severely affected by the loss of an entire generation in pitiless sense.

At the same time, the idea of a "lost generation" had its critics, even among those who essentially belonged to it. T. E. Lawrence, for example, argued that the term was in danger of becoming an excuse for inaction and failure. As he wrote to William Rothenstein in 1928: "They said the best of us were killed. There's far too much talent still alive." Wohl comments on the whole phenomenon with typical good sense:

> Like most myths, the English myth of a lost generation did correspond to a reality. It fastened on simultaneously to a few severe losses suffered within a small and clearly defined ruling class and to the difficulties that survivors from this class (and others below it) had in adjusting to the political and social realities of postwar England. Families from all social strata suffered; but older sons from the dominant political and cultural elites died in disproportionate numbers, and their loss was publicized in what now appears to have been a disproportionate (if understandable) way. The term "missing generation" in England meant "missing elite". "Missing elite" meant the declination, partial destruction, and psychological disorientation of the graduates of public schools and universities who had ruled England during the previous half-century. Reading the literature of the lost generation, one seldom has reason to remember that of the 700,000 British combatants who died during the war, only 37,452 were officers—and yet in these 37,000 died not the troops they commanded who are enshrined in the myth.

In his chapter on Spain, where the Great War naturally had a much less direct influence, but where the Spanish defeat by the United States in 1898 was a major national memory, Wohl traces the growth of generational thinking from Azorín's "generation of '98" to Ortega y Gasset's "Leagues for Spanish Political Education"—perhaps the Spanish equivalent of the generation of 1914.

The chapter on Italy, in addition to a most interesting account of Omodeo's inadequately known book on the Great War, *Momenti della vita di guerra*, outlines the generational attitudes of Papini and Prezzolini. It also contains a useful analysis of the role of generationalism and youth rhetoric generally in Italian Fascism. "*Giovinezza! Giovinezza!*" became the official Fascist hymn and Mussolini characterized his regime as one in which "during" youth would always be given preference over "cowardly" age. Once again, a conflict of generations was implied.

It is clear enough from the political statements of Mussolini or indeed from the writings of Massis or Vera Brittain that they did not possess a very clear view of what they meant by the term "generation". What is the extent in years of a generation? Is a generation strictly composed of novels or should it be broadened into an concept of a contemporaries whatever their age? Are generations composed of the intellectual elite of an age-group? Are they class-based? In discussing some of the answers given to these questions Wohl focuses on the theoretical writings of three thinkers in particular: François Mentré in France, Karl Mannheim in Germany, and Ortega y Gasset in Spain.

Mentré's *Les Générations sociales*, influenced by the Massis and Tarde survey, was first conceived in 1914 and finally published in 1920. It is the first book on generations of a national history. Mentré regarded the duration of a generation as being about fifteen years, and saw generational change as longer than cultural crises. Also, as opposed to the French and German traditions, Ortega saw the relationship between the generations as one of collaboration and prolongation rather than conflict. Needless to say, this specific Spanish experience encouraged these ideas. Ortega saw the generation of the late 1920s, for example, as the inheritors of the thinkers of '98. Again, modern Spanish history suggested three distinct generations separated by intervals: the generations of '98, 1914 and circa 1930. He believed that each generation had a mission to fulfil, sought to define the particular mission of his own generation, and spent much of his time lamenting the failure of his generation to carry out its task.

Wohl sums up the common contribution of all three theorists as follows:

> All three men reached the conclusion that generations had to be defined in terms of a sensibility, a fate, and a program. All three were attracted by the notion that generations possessed styles of life. All three believed that these styles were truly collective in that they extended beyond a handful of intellectuals or politicians. All three wanted history to deal with the things men took for granted or felt as well as the things they thought or thought they thought. All three realized, albeit with varying degrees of clarity, that a person's ideas and actions must be discussed in the context of his stage of life. And all three understood that age, in use Ortega's phrase, was not a date, but a "certain way of living".

In the course of his account of the generation of 1914 Wohl raises many interesting things on the subject of the Great War. He explains why most generations tend to regard themselves as "lost" and expounds an acute sense of discontinuity, and he implies that the generation of 1914 was probably not unique as it considered itself to be. Network losses, those who were born between 1880 and 1895 "poorly gave themselves a distinct identity in so far as they could be colorfided with the beginning of a new century and their manhood with the horrors of the Great War. More particularly, the experience of fighting in the trenches taught a particularly stark lesson in generational thinking since those being slaughtered tended to be young and those directing the slaughter—from the rear—tended to be rather older. The resultant dichotomy was therefore strengthened, just as it was greatly simplified into an innocent victim/warmongering profiteer contrast and conflict.

Wohl also argues, with some force, that the majority of intellectuals were more seriously disillusioned by the first *Felix* year of peace than by the war itself. Further, he says, it is not strictly true that they were prevented from taking over power by the fact that they already in positions of authority. On the contrary, they were largely fact-orientated, they had picked up their education in a strange school, they had little or no experience of adult civilian life. In short, they were prevented from taking over power very largely as a result of the trauma which they had undergone.

Not least, Wohl has some perceptive things to say and cites some evidence in connection with two major ambiguities: some dealt with the Great War—it is clearly how the coming of war could be regarded both as inevitable and as impossible by members of the same generation. He shows equally well how war was described in terms of unmitigated horror and disaster by some (for example, Barbusse, Remarque), while others, for example, Montherlant, actually found in it elements of joy, challenge and release. Yet, despite underlining the fact that which theorists have sought to impose on the idea of a "generation" in 1914" Wohl appears to regard it finally as a very influential concept.

John Cruickshank is professor of French at the University of Sussex.

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Sir Charles Carter is Chairman of the Research and Management Committee of the Policy Studies Institute, and was Vice-Chancellor of the University of Lancaster from 1963 to 1979.

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BOOKS

Instructive volcanology

Volcanology
H. Williams and A. R. McBirney
Blackwell Scientific, £19.50
ISBN 0 87735 3212

Williams and McBirney's book is the first to take volcanology really seriously. In the past the authors of books on volcanoes have usually been beguiled by the sheer captivating interest of volcanic eruptions into writing long narrative passages on great historic eruptions and on eruptions that they happen to have observed themselves. This is true even of books which are regarded as standard texts, such as Macdonald's *Volcanoes*, and to a much greater extent of Bullard's *Volcanoes of the Earth*.

Volcanology is the first book to confine itself exclusively to the science of volcanoes and volcanic processes. It starts with chapters on the physical processes controlling the nature, origin and movement of magma, continues with chapters on the modes of eruption of different volcanic materials, and concludes with an examination of some of the broader, general aspects of volcanism. In all of these areas the book far surpasses anything else in the market.

It does, however, have a number of weak points, many of which the authors draw attention to in their rather self-effacing preface. First, the authors commenced their collaboration on the book in 1964. Inevitably, the book shows many signs of its long gestation period, during which the new eruptions have taken place and new ideas have emerged in the scientific community. Perhaps the most obvious sign is the fact that whereas some sections are crisply up to date, others are some years behind the times and show evidence of rapid dressing-up, such as the inclusion of a single photograph of a Martian volcano in the section on shield volcanoes. A few figures are also present to which no reference is made in the text. Presumably, they have survived from earlier versions of the manuscript. In this context the authors' disarming statement in their preface is illuminating: "We have tried to acknowledge the source of illustrations, but some were gathered so long ago that we are now unable to trace their origin."

Second, the book has a distinctly idiosyncratic flavour, clearly reflecting the prejudices and interests of the authors. This is reflected not only in the content of the text, but even in the presentation of the figures. There are relatively few photographs, and a great many diagrams. The latter are all the work of Christine McBirney; and though most are perfectly satisfactory, a rather curious, folksy, hand-lettered style has been used throughout, which often detracts from the crispness and clarity of the original. A more orthodox format would have been better.

Third, large areas of the subject are almost completely omitted. Most important of these are geochemistry and petrology. The authors hint at a second volume on this subject, but the present one would undoubtedly have been much more useful to student readers if these important aspects had been covered perhaps at the expense of some of the very full morphological descriptions which are well covered in existing texts (such as Macdonald's), and the rather cursory, hand-waving section on "Volcanism and Man". Less importantly, there are only the most fleeting references to planetary volcanism. Though understandable, this omission is sad, because there is much that can be learned about terrestrial volcanism from a study of its planetary context, in particular, and from an appreciation of the important role that volcanism has played in the evolution of the Earth as a whole.

Inevitably, there are errors and omissions. Some of the errors are surprisingly bald, and may reflect the reliance of one author on the memory of the other; there is, for example, quite definitely no dome in the summit crater of El Misti (page 188). And although there is a fairly full discussion of hydrothermal systems, the authors stop short of discussing the origin of ore deposits, surely one of the most directly useful results of volcanic activity. The first reference I looked up in the very extensive reference list was not there; this may have been an unfortunate coincidence, as all the others that I checked were. But no book is perfect.

All of us who are concerned with the study of volcanic rocks will have cause to be grateful to Williams and McBirney for their efforts over many years to the production of this book. I wish them well in their work on a topic on geological volcanology; I hope fervently that it will appear in less than 14 years.

Peter Francis

Peter Francis is lecturer in earth sciences at the Open University.

Role of plant hormones

Plant Hormones and Plant Development
by William P. Jacobs
Cambridge University Press,
ISBN 0 521 22062 9

Any reader of this book will soon become aware of the deep sense of mission that has led to its writing. The author has set out to record in a definitive gospel according to W. P. Jacobs the events that led to the discovery, isolation and chemical identification of the first plant hormone, auxin, and then to describe studies in plant growth and behaviour that have stemmed from the early work. The book is very clearly written, with many cross-references, and is certainly worth reading.

The title of the book is somewhat misleading, for the thrust is concerned primarily with the role of auxin. Reference to other hormones occurs only where the author considers their interaction with auxin is critical, such as the cytokinins in the chapter on leaf and bud development, and abscisic acid in senescence and leaf fall. Gibberellins are more frequently treated and have warranted a chapter in an assessment of the evidence for "flowering hormones". Although the discovery of gibberellins is described in considerable detail and belief information is presented for gibberellins, only passing reference is made to abscisic acid, phenylacetic acid, ethylene and other hormones at all.

In the 11 chapters there is, however, much to be learned from the many studies the author surveys on phototropism and geotropism, apical dominance and abscission. Polarity of cells and the experimental approaches that have been used in attempts to understand the movement of auxin, and to some extent that of other chemicals, between tissues is carefully analysed and discussed in detail. One chapter is devoted to the part that auxin and other hormones may play in the growth of roots.

Overall, the undergraduate and graduate student will find much in the book that is both useful and interesting. The author's insistence on the critical approach, is a good lesson for all, but each reader must then apply his own critical judgement to the text. The book must be considered as a personal interpretation of the role of hormones in selected areas of plant growth and development. The reader will find, relatively, little information on the latest research, and on the author's admission, very little material of a biochemical nature. Six pages on the mechanism of auxin action compared with 29 pages on sieve tube and tracheary cell differentiation—one of the author's special fields of interest—is an example of this selective approach.

Daphne Osborne

Daphne Osborne is head of the Developmental Biology Group of the Agricultural Research Council Unit, Begbroke, Oxford.

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BOOKS

Treading again the ancient track

John Cowper Powys and the Magical Quest
by Morine Krissdottir
Macdonald & Jane's, £8.95
ISBN 0 354 04492 3

John Cowper Powys

This imperfect and inconclusive book is deeply thought-provoking. There will be many who begin by finding it uncongenial at a surface level, only to discover that it has just missed being quite the reverse at a deeper level.

It is not well arranged. One or two authors turn up significantly in the text, but the notes and bibliography give no adequate clue to them: the author relies a great deal on secondary sources, books about books; sometimes we have the Cates note of English translations or later editions; and a decisively important Powys quotation, one which puts this whole book into perspective, is relegated to the first page of the notes. Nor is the style quite what its magisterial subject deserves. Professor Krissdottir inclines to be light and bright. "Follow him who may", she pronounces over Powys twice, on consecutive pages. Powys's conception of the magician-role turns at one point into his nearly "squaring the magic circle". "For finally, the Mothers win", she cutely concludes the whole book. Certainly Professor Krissdottir is not the "scientific professor" whom Powys himself slaughters in that decisive (if squandered) quotation.

A truly scientific professor might demur further. The book's purpose is in show how Powys (like certain other major authors, one may note) sought to reverse the progression in history—celebrated by Vico or Comte—and, in Vaughan's words, to "travel back/And tread again that ancient track" of mythology before. It was overprimed by religion, overpainted in its turn by philosophy (and that, by psychiatry and sociology). But the trouble is, Powys's grand centralities: "An existence in perfect harmony with the cosmos" is fine, but I am sure that capitating with one's neck stretched out like a tortoise has nothing at all to do with it. As for *Porius*, that the "transformation of man" (as a great novel may elucidate that phrase) has anything *essentially* to do with Nigredo, Albedo, Rubedo and the other alchemical esoterica seems absurd.

The author says that the function of her book is not to discuss Powys's "artistry" (disquietingly simplistic word?), but to "analyse the meaning of Powys's symbols". She pursues these, skilfully, persuasively, into the labyrinths of comparative occultism. In another sense, though, they could be pursued precisely into those "outer events" in the novels that she rather shrugs her shoulders over. Powys's "complex vision" is seen as an "interweaving of strands of esoteric myth", and the "richness of the patterns in his mind" as "arcane lore".

Open a novel, though, and a reality of quite another kind establishes itself. Powys, no other British writer of this century, has in the first place insight into man immersed in his environment. Likewise with his people. We see the best of them more unkodly and intimately than we see ourselves. "His mind seemed more and more able to regard everything *from below*, such as vegetable life would feel for animal life"; "there were moments of drawing back into the magic of uncertainty". Powys sees the consciousness of people as having a spacious openness, occult centrality and mysterious energy, comparable to what the ordinary man might see in the weather. All is power, change, life, while the section is hidden away.

Surely this is where the "richness" of Powys's patterns primarily lies, and not in the arcana and esoterica of occultism and "unconsciously" adopted initiation rites. The breadth and power of the former are the independent variable, the latter the dependent. As with Yeats (from whom some of the chapter-epigraphs in the book are taken), a certain sense of life attached occultism to itself, not the other way round. That does not, however, remove the interest and the occasional originality of the book; and there is something else to say.

Powys's own imaginative vision may be the primary reality, and he read authors congenial to it and used details from them in his books. But he is only one of several major authors to have shared the occult enthusiasm. Can we say simply that the imagination, under siege in a world that tends to see humanity as social "groupings" and programmed behaviour, adopts a response of "retreat in a storm"? That sounds a bit too easy, a bit too much like plastering over what Professor Krissdottir calls "the cracks developing in our well-ordered cosmos". The book leaves one thinking, as from Powys, to such issues as this.

John Holloway

John Halloway is professor of modern English at Cambridge.

Wells

H. G. Wells: discoverer of future
by Roslynn D. Haynes
Macmillan, £12.00
ISBN 0 333 27186 6

Roslynn D. Haynes describes herself as a "scientist who dabbled in the literary camp", and, although the name appears between Einstein and Socialism in her index, presiding genius behind her book is that of C. P. Snow. Surveying the influence of science on literary thought, she offers, in effect, enthusiastic endorsement of Snow's arguments in the "Two Cultures" debate. Wells, for her, is one of very few writers to have responded adequately to the revolution in lives that science is bringing about.

Haynes is at her best in assessing Wells's claims as a pioneer in the manifold applications of scientific thought to society. His pre-Einsteinian *Time Machine* put forward a view of time which was in accordance with relativity theory. Wells's characterization shows how the influence of the distantly alienating procedures of micro- and taxonomy which he learnt as a student (his Martians study Earth as we would study the creatures that "swarm and multiply in a drop of water"), and the great interest in the psychology of the unconscious that was found in the early years of this century. In other cases, Haynes argues, he was a remarkably prescient writer: first to be "fully aware of the distinction between science and technology"; the virtual inventor of such phrases as "social biology" and "human ecology"; the first serious advocate of space travel as a necessary step for man's survival; and, at a very different level, the first novelist to portray the "modern young woman"—and, for that matter—with a scientific education. Not to mention his anticipations of the tank, aerial warfare, and the atomic bomb.

All this makes for an impressive case, lucidly and systematically argued, and ranging from an engaging examination of Wells's London University DSc thesis—scientific merit is negligible—to praise for the fertility of his imagination, sympathetic handling of his debate over the novel with Henry James. Nevertheless, it is a bit much to claim, as the author and her publishers do, that this book "fills a serious lacuna in Wellsian scholarship". A good deal of Haynes's material, beginning with the account of Wells's intellectual apprenticeship to T. H. Huxley, is familiar and secondary derivative. Moreover, the critical commentary comprises the bulk of her text—the same little time ago.

Though she has not isolated relevance to the future of Bloom's book, she has, and good manners, or tolerance, or sheer muddle, can long delay the moment when such incompetence is exposed.

Dr Ashworth's story is about Gresham's law: the bad tends to drive out the good. It is certainly true that there are instructive similarities between education and the economy over the last thirty years: in both cases, governments thought they had discovered a few simple mechanical devices by which some of the harsher realities of the world could be transformed. By federal fiat, the uneducated poor could be transformed into fully equal citizens, just as a little pump priming could keep prosperity continuously out of reach.

Like all good horror stories, this one has a clear moral: beware of governments when they come bearing gifts. For the nice thing—money—came first, and only later came all the nasty things. Federal control was inevitably bureaucratic, and brought standardization in its wake. The old and crusty discretion of college principals to run their affairs as they chose soon collapsed as the courts enforced "due process" upon universities. Colleges participating in the Comprehensive Employment Training Act, Dr Ashworth tells us, were instructed by the Government that they could not dismiss students for not attending classes or failing their courses. The educational aims of universities were rapidly subverted by the federal government's decision to use higher education as a tool in transforming the situation of social minorities.

The horror is compounded by the fact that those subjects which are most preeminently educational were much more grotesquely affected than those with a large technical component. Incompetent engineers are no use to anyone because their bridges fall down; and no one wants to consult doctors who have benefited from minority soft options—which is perhaps the reason why the only serious revolt against the federal embrace came from powerful medical schools whose entrance requirements were being tampered with. But incompetent philosophers, literary critics and social scientists can go on chattering with the best of them

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BOOKS

Textual scholarship

Modernizing Shakespeare's Spelling: with three studies in the text of Henry V
by Stanley Wells and Gary Taylor
Clarendon Press: Oxford University Press, £9.00
ISBN 0 19 812913 0

At a time when both Oxford and Cambridge University Presses are preparing new scholarly editions of all of Shakespeare's plays, these studies in textual matters by the general editor and assistant editor of the new Oxford Shakespeare will at the very least be of considerable value to all those of us involved in either project. But beyond this specialist group they should reach a wider readership of all those concerned with Elizabethan and Jacobean drama, whether they are interested in the language of the time, the theatrical conditions or in the provenance and reliability of texts.

Stanley Wells's essay on "Modernizing Shakespeare's Spelling" is not a statement of Oxford policy or a set of instructions to editors but an exploratory survey of the field designed to stimulate discussion on the validity of traditional editorial practices and the grounds on which editors make their individual decisions. On the whole (and in explicit contrast with the policy of the 1974 Riverside Shakespeare edited by G. Blakemore Evans which has rapidly became the standard text used in the United States) Wells espouses a thoroughgoing modernization. He makes exceptions only in cases where an original spelling can indicate a semantic difference from modern English or where it is justified by consideration of dialect, rhyme, metre, or word-play.

It is immediately apparent from Dr Wells's examples that the modernizing editor's task is not an easy one, for countless decisions will have to be made and editors will come to different conclusions from the same evidence. I am not myself convinced that one should, for instance, retain the spelling "wrack" when the sense is "wreckage" rather than "wreck" on the grounds that modern spelling distinguishes the two meanings. The OED may tell us so, but I believe most people would take "wrack" to be simply a poetic or archaic form of "wreck". The possibility of word-play on "roak" ("I leave not a rack behind" 2) might be a better justification for retaining "wrack" in some instances. The fact that such points arise does however justify Dr Wells's claim that modernization is not necessarily "a work of popularization, even of vulgarization, but [should be] a means of exploring Shakespeare's text that can make a real contribution to scholarship".

The bulk of the volume is compased of Gary Taylor's three studies in the text of *Henry V*. In the first he undertakes to refute the theory, popular since 1955, that the Folio was printed from an annotated copy of the Quarto. In the second he argues that the Quarto is based on a deliberate adaptation and abridgement of the play designed for a cast of 11. In the third he investigates how far the Quarto can be trusted in matters of verbal detail and offers examples of Quarto readings which may be corrections or authorial revisions of those in the Folio.

All three essays are obviously of major importance in relation to *Henry V* itself, and the second and third have wider implications for other plays which survive in the form of reported texts similar to the *Henry V* Quarto.

Gary Taylor argues his theories clearly and persuasively, allowing the reader to experience the compelling and excitement of this kind of textual detective work. The evidence is indeed impressive in all three studies and my only worry is over the extent of the implications for editors and directors. Even when one is convinced that Shakespeare himself was responsible for a version of *Henry V* in which the Dauphin does not appear at Agincourt, should one go so far as to give his lines to Bourbon in a modern edition, or production? Perhaps if we had a good text of the Quarto rather than a reported one we might prefer to put *Henry V* into the category of plays for which we seem to have two authentic texts (like *Troilus*) rather than assert the authority of one version over the other. The editor (and I speak feelingly) is all too easily seduced by the hope that there is a final solution to his textual problems when it would be more honest, and useful to admit more than one possibility.

Ann Thompson

Ann Thompson lectures in English at Liverpool University.

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An exemplary life

The Life of St. Francis Xavier, 1688 by John Dryden
edited by Alan Roper and Vinton A. Dearing
University of California Press, £23.00
ISBN 0-520-03740-5

That Dryden wrote a life of St. Francis Xavier will come as a surprise to many! Admittedly he did not compose it himself, but translated from the work of a French Jesuit; it was published in July 1688, the year after *The Hind and the Panther*. Not a promising time: it was noticed by only one critic who thought it had some deep connexion with the birth of the Old Pretender. I doubt if it did, Dryden's interest was to present to a Protestant audience the picture of a Catholic, and furthermore of a Jesuit, life which they would find it hard to claim had not been well spent, he might insinuate too, that the Roman church possessed evangelical resources which they might envy; for the book ended with a testimony from no less a person than Richard Hackluyt to Xavier's well-merited fame as a preacher of the gospel in the Indies. The editors of this sumptuous edition are mainly interested in the *Life* as a sample of Dryden's prose, and comment on such things as his success in livening up a translated original. Perhaps may like to read it for light on what an English Catholic thought fit to present to a Protestant public towards the end of the seventeenth century. This was a time when, underneath various contemporary excitements, the process by which Catholics came to accept the prevailing facts of English civilization was gradually going forward. In this transition Dryden is evidently a figure of importance; if we take as a test the Catholic willingness to accept the Church of England as the established church of the country, he gives out an interestingly muffled comment: "We know not in what times, or by what methods, God will restore his Church in England, or what further trials and afflictions we are yet to undergo. Onely this we know, that if a Religion be of God, it can never fall, but the acceptable time we must patiently expect, and endeavour by our lives not to undeserve."

He is still, we can see, in theory envisaging the existing English Catholic diespore as extending between two states of a fully Catholic England, though the future state has receded into the impenetrable mists of time. In practice he is for the sectarian condition in a Protestant country: "I am sure" he goes on (and in so far as he was referring to his employer he must have had his tongue in his cheek) "if we take the example of our Sovereigns, we shall guide our confidence in God alone; we shall be assiduous in our devotions, moderate in our expectations, humble in our carriage, and forgiving of our Enemies."

Eighty years later, as a response to such moderate expectations, though I would have supposed Hume is not coming from the soberest sort of Protestants, the Methodists brought out an edition of his *Life*, without the miracles.

John Bossy is professor of history at York University.

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BOOKS

Unfashionably optimistic message

A Perspective of Environmental Pollution
by M. W. Holdgate
Cambridge University Press, £15.00
ISBN 0 521 22197 8

During a coffee break in the course of a meeting of the World Health Organization (WHO) Expert Committee which was to write Technical Report No 505 on "Air Quality Criteria and Guides for Urban Air Pollutants", the member from India said to me, and he was almost in tears, that if the WHO promulgated the standards we had just been discussing many of his countrymen would be without power and would starve. The interim figures which had been suggested were so low (and were based on wholly inadequate evidence) that he would not be able to build a power station capable of meeting the recommendations which would be regarded politically in his country as Holy Writ. He reminded me that the cost of a power station stark was proportional to the cube of its height; gas washing is also prohibitively costly in terms of money and energy.

There was manifest, therefore, an urgent need for a perspective of environmental pollution. It would seem to me that concern about pollution has increased in inverse proportion to its concentration: there will be a continuing need to see pollution in perspective because its reduction beyond certain limits, determined by scrutiny of sound data on its effects, can be immensely expensive and may impoverish society needlessly.

Martin Holdgate, a terrestrial ecologist who was the first director of the Central Unit for Environmental Pollution and justly renowned for his articulateness, has written a book which ought to be read by all serious students of pollution and especially by those others who are having a ride on what has became the environmental bandwagon. They will thereby be deterred from what my professor used to call "rapid shallow thinking". Dr Holdgate's thinking is rapid but there is no shallowness in the way in which he grapples with the pathways of pollutants of air, water, soil and other targets", the "knock-on" effects on ecosystems, and the thorny problems of controlling pollution by setting standards based on the results of adequate monitoring and sound absorption of effects.

His arguments, based on his own great experience and his selection of reputable (if sometimes a trifle "dated") published work, are cogent. They do not need the numbering system which distracted me, nor are they enhanced, in my mind, by the many diagrams of boxes with arrows, among which is the illustrating biogeochemical flux. These often baffle me when I cannot find my way into the system and I then become confused about the relevance of the arrows. Similarly, I am wary of graphs illustrating hypotheses using arbitrary scales and units: figure 38, which is repeated as figure 46, can only be justified if one assumes that there is some phenomenological continuity between dose and effect. There is a great tendency for the unwise, to whom this text is addressed, to use such diagrams as a substitute for thought and data. To such people Martin Holdgate addresses a welcome warning that "Extrapolation from rats to man or shrimps to estuarine ecosystems is a process demanding care".

This book is not a technical manual; it is rather a long essay by a thoughtful man on a topic of immense importance, about which sloppy thinking abounds. If at times Dr Holdgate's fluency leads to some repetition and the utterance of statements which, in those in the trade, are platitudinous, one must remember that there are many readers who need to be told repeatedly what would seem to be obvious, and very important, truths.

The book should be on the shelves of all technical libraries; but its high price might limit its circulation, especially among those who need it most. Among such are those people of whom Professor Mellanby has written: "There are those who call themselves ecologists who appear to hate science as such. They seem to get a nasty sort of pleasure from foretelling doom. Thus when a species of mosquito becomes resistant to DDT this is a subject for rejoicing, even if it means that thousands of babies will die of malaria." Dr Holdgate's message is not of doom but of unfashionable optimism. He says: "The optimism in this book—that it will be possible to control pollution even in a world with more people living at the kind of level now found in the developing countries—is only justified assuming certain standards of human sanity." One hopes the arrows in this system are painting the right way!

P. J. Lawther

P. J. Lawther is director of the MRC Toxicology Unit at St Bartholomew's Hospital, London.

Crystal structure analysis

X-Ray Analysis and the Structure of Organic Molecules
by J. D. Dunitz
Cornell University Press, £33.00
ISBN 0 8014 1115 7

Based on the George Fisher Baker Lectures at Cornell in 1976, this book was conceived as a sequel to J. M. Robertson's *Organic Crystals and Molecules*, which influenced so many crystallographers in the 1950s and 1960s. Like Robertson's book, it has two parts: the first two thirds is on the principles of crystal structure analysis and, the rest on some aspects of the results.

Part 1 starts with diffraction and Fourier transforms, then symmetry and space groups; a chapter on "Methods of Structure Analysis", includes a substantial section on direct methods; refinement and treatment of results follow, with finally a section on experimental methods. All are treated in a concise and effective mathematical way. The treatment is also refreshingly clear, with a variety of numerical examples taken from real structures.

Part 2 begins with an account of the use of bond lengths and angles obtained from crystal structure determinations to tell us more about chemical reaction pathways, a useful review of an area in which Professor Dunitz has played so large a part. Although the title would not lead one to expect it, the book includes much inorganic material. The second chapter is about the accurate determination of electron density distributions in molecules; the third describes geometric constraints in small cyclic molecules, and the last the symmetry properties of conformational maps. Compared with Robertson's broad survey of 25 years ago these four areas are rather specialized, and only two of them are really based on practical results, the other two are mainly mathematical determinations.

Crystal structure analysis now contributes to chemical research in a wide variety of ways, from the establishment of the chemical constitution of complicated molecules to the precise determination of details of molecular geometry. The crystallographer does the structure determination and presents the results to the chemist, a specialist in another area. It is Professor Dunitz's hope that this book will be read by the chemists and allow them to make a better critical assessment of the crystallographical result. This is a most desirable objective but I am very doubtful if many chemists will really face reading part 1 with its formal mathematics. Crystallographers, however, should find it a valuable and thought provoking text, an excellent complement to the manuals and computer programs—these last produce so many numerical results so fast these days but often do not require the user to understand what is being done or how.

By comparison with other specialized textbooks, it is not unusually expensive, but it will be a large outlay for individual buyers; it is certainly to be recommended for libraries serving groups of crystallographers or interested chemists.

Marjorie M. Harding

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Eternal triangles

Was Pythagoras Chinese?
by K. J. Sweets and T. J. Kao
Pennsylvania State University Press, £20.
ISBN 0 271 01238 2

In recent years considerable interest in ancient Chinese mathematics has been stimulated by the volume 3 of Joseph Needham's monumental *Science and Civilization in China*. Most Chinese mathematical texts remain untranslated and unknown to the West, and the authors of the present monograph have performed a valuable service by drawing attention to Chinese investigations on right-angled triangles and by providing a translation with commentary of what they call "the richest source of problems from antiquity" dealing with these triangles, the ninth chapter of the *Chiu Chang Suan Shu*.

The version of this work that survives has commentary that seems to have been written about AD 250, but the original was probably composed in the third century BC. Chinese knowledge of the Pythagorean property of right-angled triangles is older than this, going back to the earliest Chinese mathematical text known, the *Chou Pei Suan Ching*. Needham considers that that text can be assigned to the 1st century BC or possibly earlier. Sweets and Kao believe that it was produced in the time of Confucius, in the sixth century BC, and was therefore contemporaneous with Pythagoras. It contains a diagram illustrating by dissection the validity of the Pythagorean theorem, and they maintain that this represents the oldest recorded "proof" of the theorem.

Fortunately, the usefulness of this interesting monograph does not depend upon this claim. As Needham has pointed out, the *Chou Pei* text asserts that "it is necessary to know the proportion of numbers before one can work with geometrical figures". Chinese work on the Pythagorean theorem concerned mensuration, and computation rather than proof. The much earlier and even more remarkable work by the "Old Babylonians" of about 1700 BC on "Pythagorean triples" was also numerical. On the other hand, even if Pythagoras himself probably had no general proof of the theorem named after him, Euclid produced one that was based on the axioms and postulates of his geometry. As we now know that the theorem is valid only in Euclidean geometry, it would seem that the Greeks should still be regarded as the first to prove the theorem. Pythagoras was, therefore, not Chinese!

G. J. Whitrow

G. J. Whitrow is emeritus professor of mathematics in Imperial College, London.

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Recent histories of the counties and towns of early modern England have suggested a diversity of local experience which questions generalizations and indicates the need for further studies. Historians, therefore, will welcome the appearance of three scholarly books on towns as diverse as Tudor York, Elizabethan Manchester and seventeenth-century Norwich.

York, by the beginning of the Tudor century, had declined from its later medieval supremacy to the sixth city of the realm. Yet despite waning economic fortunes and a decline in population, York remained a regional capital frequented by the nobility and gentry and patronized by Archbishop Wolsey. It was the Pilgrimage of Grace which changed the city's political and economic fortunes. When York opened its gates to the rebels, it also opened the eyes of the crown to the need for greater central control. After 1537 (and even more after 1560) a mere powerful Council of the North, established at York, eroded the influence of the local magnates and the political autonomy of the corporation. Under the control of the Council, the York which had been a rebel stronghold in 1536 proved loyal in the rising of 1569. And despite its religious conservatism and support for Mary, the city moved slowly towards Protestantism in the later sixteenth century. But York gained more than it lost. The Council brought customers and revitalized trade. After 1560 York began a period of economic recovery and even renewed civic pride.

Dr Palliser analyses thoroughly and carefully the economic problems, the gradual recovery, the trade and wealth of the city and the social composition of its magistracy. Throughout he writes clearly, informing the reader where necessary of the limitations of the evidence, such as statistics for population or trade. *Tudor York* underlines splendidly the importance of the growth of central authority in the sixteenth century. In parts, however, interesting questions are not asked, nor implications drawn. Dr Palliser does not discuss the impact of religious confusion and division on urban politics, and I wished that his hints about the decline of pageant were taken further. Did civic consciousness change over the century as a result of economic and political developments? The lack of evidence often makes it difficult to tackle such questions, but such a reliable and judicious reporter as Dr Palliser might valuably have ventured some comment.

By the standards of York, Manchester was a small unincorporated town of about 2,000—"the greatest meer village in England", still under manorial jurisdiction. But next to Lancaster it was the major county town to which many a "Dick Whittington" gravitated, and in which the minor gentry held property. Manchester owed its position and prosperity to its trade in woollen cloth with London. Professor Willan analyses in detail the industry and commerce of the town and the standards of living of its richer and humbler inhabitants.

Like Dr Palliser he warns against placing too much reliance on dangerous evidence, such as wills and probate inventories, reminding us that the nature of goods bequeathed may be more informative than their value. Professor Willan cites valuable evidence not in the form of statistical tables, but from case studies of individuals—and of the goods they owned and left, the debts they owed. Unfortunately none of them comes to life. What was peculiar to Manchester, what typical of urban life is not clear. The history of administration and religion is omitted and the study is too narrowly focused to cast light over a wider area.

Stuart Norwich was the second city of the realm and "as intensely politicized as any other city outside London". Professor Evans's study, the most adventurous of the three, crosses the usual chronological boundaries to investigate the political and religious life of Norwich from 1620 to 1690. During those years, Norwich did not experience the provincial isolation which Professor Everitt has discovered elsewhere. Rather, city affairs were inextricably interwoven with those of the nation. Religious nonconformity and the right of the freemen to elect their officers saw Norwich rent by factions (Puritan and Anglican, Presbyterian and Independent, Tory and Whig) for much of the period. Such divisions gave rise to central interference and even manipulation of local government as local factions put the predominance of their party and ideology before local autonomy. Yet because the governing class was not socially divided, because there was no closed oligarchy, the conflicts centred on the personnel rather than the structure of urban government. There was no social revolution and the traditional constitution survived.

At times Professor Evans seems too inclined to apply national party labels directly to the local feuds. We are given only glimpses of the role of neither party who emerge here and there to "hold the balance" and who, one suspects, put local considerations firmly first. The argument, too, is hampered by the scarcity of style and ever-lurking in tables and footnotes threaten to edge the text off the page. But Professor Evans's *Norwich* is an impressive work based on thorough research and careful analysis of a long and difficult period. It contributes greatly to a wider understanding of the interaction of urban and national politics.

What emerges most interestingly from all three studies is the extent of citizen involvement in city government. York offered to ambitious citizens a road to the mayoralty; in Manchester a substantial minority of inhabitants became involved in local office, while Norwich moved further from oligarchy in the early seventeenth century to become a uniquely open society by which citizens could—and did—remove aldermen from office. The evidence strongly suggests that citizens of early modern towns were politically conscious rather than has previously been thought and that Members of Parliament became increasingly, as Dr Evans has argued, the "representatives of the people".

Kevin Sharpe

Kevin Sharpe is lecturer in history at Southampton University.

PREDICTING THE BEHAVIOR OF THE EDUCATIONAL SYSTEM

Thomas F. Green
With the assistance of David P. Ericson & Robert H. Seidman

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Educational policy is policy for the educational system. No clear account of how that system works, how it grows, what its structure consists of, how it is governed, and what principles influence its distributive behaviour has yet been published.

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Labour unrest in Moscow

Peasant and Proletarian: the working class of Moscow in the late nineteenth century
by Robert Eugene Johnson
Leicester University Press, £12.00
ISBN 0 7185 1185 9

During the last two decades of the nineteenth century modern heavy industries were rapidly developed in Russia. In Moscow and its province industry was long-established and was primarily engaged in the manufacture of consumer goods, but even here the number of industrial workers increased from 159,000 in 1879 to 280,000 in 1900.

Ninety per cent of the population of the Russian Empire still lived in the countryside, which provided most of the new urban workers for Moscow and elsewhere. But by the 1890s the Moscow working class had acquired a certain stability: only 18 per cent of industrial workers returned to their villages annually to help with the harvest, and many remained at the same factory for a long period. By the turn of the century many, perhaps most, Moscow male workers were "hereditary proletarians" who had fathers who had worked in industry.

But the Moscow proletariat also maintained strong links with the countryside from which it had come. No comprehensive statistics are available, but factory surveys indicate that over 70 per cent of workers retained their share of the village land, even though they did not usually cultivate it themselves, and were often hundreds of miles away from it. *Zemlyaki* (workers from the same village or district) sometimes worked in the same Moscow factory and frequently kept in close touch with their fellow *zemlyaki* working elsewhere in Moscow. And at the age of 40 or so many workers left or were dismissed from their jobs and departed from Moscow, presumably to return to their own village.

This account of a proletariat with strong peasant connections is clear and convincing, and corresponds to Professor Olga Crisp's evidence about industrial labour throughout the Russian Empire at this time in the *Cambridge Economic History of Europe*, published after Professor Johnson's study was completed.

The political conclusions drawn by Professor Johnson from this analysis are less persuasive. He argues that industries and regions with "large mechanized factories, whose workers were spiritually further from the countryside, had average or below-average rates of labour unrest", while higher rates of unrest were found in some which were smaller and less mechanized. According to Professor Johnson, this was because a worker who had land to go back to and social support from his fellow-*zemlyaki* was likely to be less anxious about job security and more willing to engage in revolutionary activity than a worker who was solely dependent on the factory for his livelihood.

This conclusion is an interesting hypothesis, but it is not based firmly on the evidence. Certainly his own survey of labour unrest shows that the average number of days lost through strikes per worker was higher in factories located in Moscow rural districts than in those located in Moscow itself. But on his own account the factories located in rural districts tended to be larger, while those in Moscow worked in more giants to small workshops. Strikes tended to occur in large factories, wherever they were located: within each industry large factories were more prone to strikes than smaller factories. Thus Professor Johnson's own survey tends to confirm the traditional view that labour unrest in pre-revolutionary Russia was partly the result of the exceptional degree of concentration of its industry (in terms of numbers employed).

It is true that some of the patterns of unrest which emerge from Professor Johnson's survey do not lend themselves to this simple explanation. Thus both the predominantly small-scale brick and cement industry and the more advanced metal-working industry were prone to frequent strikes of short duration. Professor Johnson is justified in his cautious conclusion in his main text that the "discrepancies and anomalies ... cast doubt on traditional explanations of unrest and suggest that other factors must have been at work". Unfortunately he does not attempt any statistical test of correlations between his variables. But the presentation of action provided to workers by their peasant connections, on which he places so much emphasis in his concluding chapter, seems unlikely to provide a complete explanation.

Seventeen years after the end of the period covered by this book Russian workers elected the last Tsar from his throne and installed bosses out of the factories and into burrows. Can we assume that peasant connections of the Moscow proletariat, established by Professor Johnson for 1880-1900, still maintained at the immediate pre-revolutionary period? Survey evidence about the revolution suggests that by 1914 the links between industrial workers and agriculture had been broken: only a third of those continued to own land in the countryside. But representativeness and accuracy in these results have been questioned by Professor Crisp and other; the picture remains somewhat obscure.

A new dimension was added to the complex relationship between the Russian proletariat and the peasant past by the new political and economic strikes of 1905. Professor Haimson believes that the workers fresh from the countryside who led the disturbances on the eve of the First World War was decisive. But Dr M. Hickey, in a new "peasant" interpretation, has argued that the Petrograd working class, rather than the great political strikes led and undertaken by long-established workers in large factories in the metal industry. Evidently the turbulent ex-peasants and established revolutionary proletarians played their part in the overthrow of the Russian Empire. But far only small patches of the canvas of the Russian revolution have been illuminated by these lens; much of the picture remains discovered only in faint outline.

R. W. Davies

Professor Davies is director of the Birmingham University's Centre for Russian and East European studies.

Chester is published by Manchester University Press as Part of the project "Records of Early English Drama", and it is a collection of overliable contemporary records of dramatic performances in Chester up to 1642. The records are arranged by year and by divisions of civic, guild and ecclesiastical documents, to which are added the evidence of contemporary antiquarians.

The book, edited by Lawrence Clopper, costs £35.00.

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BOOKS

Fight for compensation

Less Than Slaves: Jewish forced labor and the quest for compensation
by Benjamin B. Ferencz
Harvard University Press, £9.00
ISBN 0 674 52525 6

The details of the Jewish holocaust are by now horribly familiar to most people—in particular, the fate of those Jews who met their deaths at the hands of the extermination squads of the *Einsatzgruppen* in the Soviet Union or in the gas chambers of the extermination camps of occupied Poland.

The experience of the Jews who were initially spared the gas chamber is much less well known. Selected for their physical fitness, these men and women became the most expendable part of a vast slave labour force employed in 1,634 forced labour camps and sub-camps under the control of the SS. Auschwitz, together with its 42 branch camps, held some 144,000 slaves. In view of the chronic shortage of labour within the German economy, these inmates were a commodity of whom Himmler was well aware. From 1942 he offered them to private companies in return for appropriate remunerations. The firms were not obliged to take this labour; it was up to them to request it. An elaborate accounting system was established to ensure that the companies paid the SS for every hour of skilled or unskilled labour and that deductions for the food provided by the companies did not exceed the maximum allowed. Inmates remained under the general control of the SS but under the immediate supervision of the companies concerned who had to ensure their security.

Over 200 companies availed themselves of this opportunity, employing over 250,000 inmates. They included many of the most prestigious firms in Germany: I.G. Farben, Krupp and Siemens, for example, all established works within the Auschwitz complex. The conditions in which these slave labourers worked were for the most part appalling and for the Jews they were worst of all. Over 30,000 Jews perished in three years working for the I.G. Farben Buna rubber factory in Auschwitz.

In the course of the Nuremberg trials a few directors of German companies were found guilty of the abuse of slave labour. They included five directors of I.G. Farben as well as Alfried Krupp who was not, as a widespread legend has it, an innocent man substituted for his senile father who was unable to stand trial, but had in fact been in full control of the company from 1943, when many of the worst abuses occurred. By January 1951, however, not a single company director remained in custody and Krupp had been given back his entire fortune. They had all been released as an act of clemency by the new United States Commissioner, John J. McCloy. Over the following decade or more, Benjamin Ferencz, the author of this book—an American prosecutor at the Nuremberg trials who was then asked to play a leading role in a number of Jewish organizations seeking compensation for Jewish suffering—and others struggled to persuade the German companies to pay some compensation to their former slave labourers.

Their struggle was a demoralizing one, and forms a melancholy story. Their case under German law was weak and ultimately, on February 26, 1963, the German Federal Court decided that claims of forced labourers were in the nature of reparations which would have to await a final peace treaty with Germany. Aware of this weakness, the Jewish negotiators concentrated first on moral persuasion, but to no avail: the German companies refused to accept any moral obligation. Their defence was first, that they had been compelled to take on concentration camp labour (this is untrue), and second, that in a "total" war forced labour was not unlawful. In the end, concern for their public image, combined in some instances with a threat to specific economic interests involving the United States, persuaded a few major firms to compensate.

The results, even so, were meagre. Fewer than 15,000 Jews received any share of the combined total of under $13m paid out, and the huge combine of Friedrich Flick escaped without paying a penny. A few people came out of the story well: one or two German lawyers and a few German courts. In general, however, the spectacle of the same men in the same firms, which had employed thousands of slave labourers before 1945, struggling to avoid paying even a pittance to their victims from the vast profits of the "economic miracle" is profoundly depressing.

In the face of his experiences Ferencz remains impressively free from bitterness, refusing to blame the Germans as a nation or capitalism as an economic system for what occurred. He prefers to set the affair in a wider context of the tendency of mankind "to shut its eyes to cruelty if it could be rationalized as being in the interests of the state or a popular cause. The evils here recounted . . . stemmed not so much from hatred as from an indifference that made it possible for otherwise decent people to accept or ignore what was happening." Mr Ferencz's book not only provides useful information on the forced labour programme as well as valuable insights into the mentality of the West German economic elite during the postwar years, but like all good holocaust studies it also raises more fundamental issues of human behaviour.

J. D. Noakes

Dr Noakes is lecturer in history at Exeter University.

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Meaning in ritual

Day of Shining Red: an essay on ritual
by Gilbert Lewis
Cambridge University Press, £10.50
ISBN 0 521 22278 8

There is a long tradition of studies of the ritude of the people of New Guinea, the most famous of which is still Bateson's *Naven*: Most of these seem to share two characteristics: the first is that they concentrate on initiation ceremonies and the second is that they mix the study and description of particular ceremonies and practices with wide theoretical considerations concerning the nature and interpretation of ritual. This book is a fine contribution to this tradition in that it adds to our knowledge of the religious practices of a specific New Guinea people, the Goau of the Sepik District, and is also a significant addition to the general discussions on the nature of ritual which are becoming prominent in anthropology once again.

This is not an easy book, partly because its mixture complicates the task of the reader. Probably aware of this problem, the author has helped us considerably by providing, in nineteenth-century fashion, an analytical table of contents which runs for eight closely printed pages.

The real source of the reader's difficulty, however, comes indirectly from its central very valuable message: a warning that in such a delicate matter as understanding the meaning of rites one should not rush to piecing interpretations which are not based on satisfactory evidence. "The anthropologist", he tells us, "is not free to speculate according to his fancies on the meaning of the rites."

Lewis warns us against a whole range of over-hasty interpretations. One of his main examples is the practice of penis bleeding common among the Gnau. This has been interpreted as part of the ideological war of the sexes, a kind of mimic insemination on the part of man by which they symbolically take on themselves the power of women to produce children. Lewis rejects this interpretation simply because the people he studied gave him no hint of understanding this type of self-inflicted mutilation as having the sort of meaning, however hard he prodded them in that direction.

Lewis tells us that it is not because they are careless that anthropologists have "discovered" meanings or messages which are totally foreign to the people studied, but because they have made a more fundamental mistake about the nature of ritual. This mistake is implied in the view that rituals are a form of communication by code, conveying statements, propositions or explanations which are only there to be deciphered. But rituals are emotionally evocative affairs, not intellectual statements, and Lewis shows this by some very careful and sensitive description of a kind unusual in anthropology. For example, he gives us long extracts of the conversation of people who are planning and organizing rituals, discussing among themselves in what order certain acts should take place, what is essential and what is not. In all manner of ways he attempts that most difficult task of the ethnographer: to convey the understanding of the subjectivity of participation.

In the face of the problem, Lewis does point us in an interesting direction. One of the clearest and most illuminating chapters shows how for the Gnau migrant labour has come to be seen as a sort of initiation. Here Lewis shifts the issue from trying to understand what people mean by what they do to the question of how they come to do things in a particular way. Suddenly we feel on firmer ground.

It is perhaps in the understanding of the processes of the formation of ritual as well as other practices, and in trying to generalize from this analysis of processes to general rules, that we might get away from the hopeless search for "meanings".

Maurice Bloch

Maurice Bloch is reader in anthropology at the London School of Economics.

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Louisiana State, May, 352 pp, £13.50

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Edinburgh

Senior Lecturers: W. A. M. Cutting (child life and health); C. C. Davies (clinical surgery); M. W. Miller (conservative dentistry, temporary); M. F. Macintosh (orthopaedic surgery); M. L. Hooper and J. Paris (anatomy). Lecturers: W. P. Horbook (bacteriology, temporary); R. L. Baxter (chemistry); T. Tolley (fine art); Miss T. F. C. Mackay (geriatrics); R. J. Barton (history); S. K. Smith (obstetrics and gynaecology); I. D. McCarthy (orthopaedic surgery); L. L. Beynna (surgery); F. J. Clibber (surgery, temporary).

General

Professor Maurice Craft, head of the colleges and in-service division of the School of Education at Nottingham University has been appointed chairman of the National Teacher Education Advisory Group of the Commission for Racial Equality.

The Council of the Association of University Teachers (Scotland) has elected the following to serve for the year 1980-81: — A. J. McTernan, director of the computing centre, Heriot-Watt University, as Chairman. Dr H. R. Sefton, lecturer in church history at the University of Aberdeen, as vice-chairman. Dr D. F. McNamee, lecturer in mechanical engineering at the University of Glasgow, as a member of the executive committee and Dr R. V. Emanuel, lecturer in chemistry at the University of Glasgow, as a member of the executive committee of the AUT.

The following were re-elected for a further year: Mr B. W. Ribbons, lecturer in botany at the University of Glasgow, as secretary, Dr R. P. Duig, senior lecturer in English at the University of St Andrews, as treasurer. M. Green, senior lecturer in sociology at the University of Strathclyde and Professor A. M. North, vice-principal and Birmiah Professor of physical chemistry in the University of Strathclyde as members of the executive committee. Dr Jennifer Birkett, lecturer in French at the University of Dundee, as a member of the executive committee of the AUT, and R. E. Williams, as auditor.

Degrees for Roy Thomas Holland and Baron Lever.

Salford

The following will be awarded honorary degrees in July and September:

LLHD: Mr Jack Goldhers, member of the university council and senior partner in Goldberg, Blackburn and Co; Sir Charles Grove, conductor and musical director; the Rev Thomas Holland, Bishop of Salford; Baron Lever of Manchester, former chancellor of the Duchy of Lancaster.

DSc: Professor Sir William Hawthorne, Master of Churchill College, Cambridge; Dr M. E. Merchant, director of research planning, Cincinnati Milacron Inc.; Sir Benan Maddock, principal, St Edmunds Hall, Oxford; Dr J. A. Pope, former vice chancellor, University of Aston, Birmingham.

Forthcoming Events

Opera in Translation, a symposium organized and presented by the National Opera Studio will be held on April 29 in the Conference room of the New Gallery, Regent Street. The symposium will examine in detail the pros and cons of opera in translation. Speakers include Mr Alfred Alexander, author of Operaunatomy and Mr Alan Blyth, music critic of The Daily Telegraph. Free tickets available on application to the administrator, National Opera Studio, 1 Mermaid Court, Borough High Street, Southwark, London, SE1.

* * *

A conference on literature and the urban experience is to be held at Rutgers University in Newark, New Jersey from April 17-19. It will bring together major authors and educators to focus on the subject of literature and cities. Among participants are Edward Albee and Stephen Spender.

* * *

"Health and Welfare in the 1980s" the annual health congress of the Royal Society for Health will be held at Leas Cliff Hall, Folkestone from April 22-25. Topics include: "The over eighties, a new explosion in care". Further details from: the Secretary, Conference Department, The Royal Society of Health, 13 Grosvenor Place, London SW1X 7EN.

* * *

"Education for International Understanding" is the theme of this year's exhibition of books for and from the Third World being held on April 28 and 29 in the Jeffrey Hall of the Institute of Education of London University, Bedford Way, London WC1, in addition on the same two days a conference "Development Education: Education for Life in a Changing World" will be held in the department of education in developing countries of the institute. Further information from R. Gardner, lecturer in education at the institute.

* * *

"Self Portrait in a convex mirror" is the title of the inaugural lecture being delivered by Professor John Dixon Hunt, professor of English literature in the University of London on April 29 in Tuke Hall, Bedford College, Regents Park, London NW1 4NS.

* * *

DEKOR—Decor and Ornamentation in Recent American Art an exhibition at the Museum of Modern Art Oxford from April 20 to June 1 will be showing in the upper end middle galleries.

* * *

"The FE contribution to YOP", a series of working conferences sponsored jointly by the National Association of Teachers in Further and Higher Education and the Manpower Services Commission, is to be held first in London at Kingsway-Princeton College, Sidmouth Street, London WC1X 8JB, on April 25. It will then move to Radnor College of Further Education on April 30, Lansbury Polytechnic on May 1, Stoke Mandeville on May 2, Technical College May 5, North Cheshire College, May 7, West Technical College, May 13, Coventry Danby College, May 19, and will be back in London at Maiffe, Institute, Hamilton House, Mabledon Place. Further details from Mr Mick Fenn, conference secretary, care of Maiffe, Hamilton House, Mabledon Place, London WC1.

Open University programmes April 19 to April 25

A Day on the Hustings (Saturday, 16.25).

Saturday April 19

BBC 2

7.40 Science and belief: from Copernicus to Darwin (1543-1859). Let Newton be! (AMSTRAD) prog 11.
8.05 Typewriting-century poetry: T. S. Eliot and America (A365 prog 4).
8.30 Arts foundation course: Music as a Musical Language (A101) prog 11).
8.55 Cognitive psychology: What is Cognitive Development? (D203) prog 5).
9.20 Art: Introduction to psychology: Perceiving Form (D262) prog 3).
9.45 Science and the rise of technology since 1600: Electric Power and Electronic Control (AS361) prog 5).
10.10 Music: Harmony (A241) prog 3).
10.35 Politics, people and administration: The Civil Service (D334) prog 3).
11.00 Arts foundation course: Introduction to Drama and Theatre (A101) prog 11).
11.25 Technology and society: Technological Change (T252) prog 5).
11.50 Mathematics foundation course: Modelling Motion (A100) prog 5).

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6.10 Open Forum.
6.30 Consumer politics to do with it. Discussion (D232) prog 5).
7.00 Technology and society: Technological Change (T252) prog 5).
7.40 Arts foundation course: Music as a Musical Language (A101) prog 11).
8.05 Cognitive psychology: What is Cognitive Development? (D203) prog 5).
8.30 Art: Introduction to psychology: Perceiving Form (D262) prog 3).
8.55 Science and the rise of technology since 1600: Electric Power and Electronic Control (AS361) prog 5).
9.20 Music: Harmony (A241) prog 3).
9.45 Politics, people and administration: The Civil Service (D334) prog 3).
10.10 Arts foundation course: Introduction to Drama and Theatre (A101) prog 11).
10.35 Technology and society: Technological Change (T252) prog 5).
11.00 Mathematics foundation course: Modelling Motion (A100) prog 5).
11.25 Interdisciplinary and nonsexist language: The Practice of Inclusive Language (A322) prog 5).
11.50 Personality and learning: Intelligence (A281) prog 5).
12.15 Fundamentals of Russian nonfiction: Gorky, Herzen, Lenin (Russian Texts) (A662) prog 5).
12.40 Tocsin: Case Study (T120) prog 5).
13.30 Understanding space and time: Relativity Today (S254).
13.20 Education and the urban environment: Urban Schools (E323) prog 5).
18.25 Why bit the teaching—A Television View?

Alternative broadcasts for students in the Radio Scotland and Wales areas only

5.55 Alan's religious quest: The Mystical Vision (AD300) prog 5).
6.15 The sociological perspective: Role and Stratifying Institutions (D102) prog 5).
6.50 Chemistry: Structure and Reactivity (S251) prog 5).

RADIO 3 (VHF)

9.00 Cognitive psychology: The Development of Mental Rotation (A365) prog 4).
9.30 Politics and Intervention: Lenin (D334) prog 3).
10.20 Poetry of industrialism: The Cost of Iron (Poetry and Science) (A305) prog 5).
11.00 Arts foundation course: Music as a Musical Language (A101) prog 11).
7.40 Mathematics foundation course: Modelling Motion (A100) prog 5).
8.05 Personality and learning: Intelligence (A281) prog 5).
8.30 Arts foundation course: Introduction to Drama and Theatre (A101) prog 11).
8.55 Technology and society: Technological Change (T252) prog 5).
9.20 Art: Introduction to psychology: Perceiving Form (D262) prog 3).
9.45 Science and the rise of technology since 1600: Electric Power and Electronic Control (AS361) prog 5).
10.10 Music: Harmony (A241) prog 3).
10.35 Politics, people and administration: The Civil Service (D334) prog 3).
11.00 Arts foundation course: Introduction to Drama and Theatre (A101) prog 11).
11.25 Technology and society: Technological Change (T252) prog 5).
11.50 Mathematics foundation course: Modelling Motion (A100) prog 5).

RADIO 4 (VHF)

Not in Scotland and mid-Wales (transmitters permitting).

6.10 Open Forum.
6.30 Consumer politics to do with it. Discussion (D232) prog 5).
7.00 Technology and society: Technological Change (T252) prog 5).
7.40 Arts foundation course: Music as a Musical Language (A101) prog 11).
8.05 Cognitive psychology: What is Cognitive Development? (D203) prog 5).
8.30 Art: Introduction to psychology: Perceiving Form (D262) prog 3).
8.55 Science and the rise of technology since 1600: Electric Power and Electronic Control (AS361) prog 5).
9.20 Music: Harmony (A241) prog 3).
9.45 Politics, people and administration: The Civil Service (D334) prog 3).
10.10 Arts foundation course: Introduction to Drama and Theatre (A101) prog 11).
10.35 Technology and society: Technological Change (T252) prog 5).
11.00 Mathematics foundation course: Modelling Motion (A100) prog 5).
11.25 Interdisciplinary and nonsexist language: The Practice of Inclusive Language (A322) prog 5).
11.50 Personality and learning: Intelligence (A281) prog 5).
12.15 Fundamentals of Russian nonfiction: Gorky, Herzen, Lenin (Russian Texts) (A662) prog 5).
12.40 Tocsin: Case Study (T120) prog 5).
13.30 Understanding space and time: Relativity Today (S254).
13.20 Education and the urban environment: Urban Schools (E323) prog 5).
18.25 Why bit the teaching—A Television View?

Alternative broadcasts for students in the Radio Scotland and Wales areas only

5.55 Alan's religious quest: The Mystical Vision (AD300) prog 5).
6.15 The sociological perspective: Role and Stratifying Institutions (D102) prog 5).
6.50 Chemistry: Structure and Reactivity (S251) prog 5).

RADIO 3 (VHF)

9.00 Cognitive psychology: The Development of Mental Rotation (A365) prog 4).
9.30 Politics and Intervention: Lenin (D334) prog 3).
10.20 Poetry of industrialism: The Cost of Iron (Poetry and Science) (A305) prog 5).
11.00 Arts foundation course: Music as a Musical Language (A101) prog 11).
7.40 Mathematics foundation course: Modelling Motion (A100) prog 5).
8.05 Personality and learning: Intelligence (A281) prog 5).
8.30 Arts foundation course: Introduction to Drama and Theatre (A101) prog 11).
8.55 Technology and society: Technological Change (T252) prog 5).
9.20 Art: Introduction to psychology: Perceiving Form (D262) prog 3).
9.45 Science and the rise of technology since 1600: Electric Power and Electronic Control (AS361) prog 5).
10.10 Music: Harmony (A241) prog 3).
10.35 Politics, people and administration: The Civil Service (D334) prog 3).
11.00 Arts foundation course: Introduction to Drama and Theatre (A101) prog 11).
11.25 Technology and society: Technological Change (T252) prog 5).
11.50 Mathematics foundation course: Modelling Motion (A100) prog 5).

RADIO 4 (VHF)

Not in Scotland and mid-Wales (transmitters permitting).

6.10 Open Forum.
6.30 Consumer politics to do with it. Discussion (D232) prog 5).
7.00 Technology and society: Technological Change (T252) prog 5).
7.40 Arts foundation course: Music as a Musical Language (A101) prog 11).
8.05 Cognitive psychology: What is Cognitive Development? (D203) prog 5).
8.30 Art: Introduction to psychology: Perceiving Form (D262) prog 3).
8.55 Science and the rise of technology since 1600: Electric Power and Electronic Control (AS361) prog 5).
9.20 Music: Harmony (A241) prog 3).
9.45 Politics, people and administration: The Civil Service (D334) prog 3).
10.10 Arts foundation course: Introduction to Drama and Theatre (A101) prog 11).
10.35 Technology and society: Technological Change (T252) prog 5).
11.00 Mathematics foundation course: Modelling Motion (A100) prog 5).

RADIO 3 (VHF)

Alternative broadcasts for students in Scotland and mid-Wales only

24.00 International politics and foreign policy: Peace by Small States (D332) prog 5).
00.20 Art and environment: Inquiry (TAD202) prog 5).
00.40 Open Forum 18.

Sunday April 20

BBC 2

Note: from 8.30 to 9.45 am Viewers in Wales will be able to see programmes on S4C Wales.

7.40 Starting mathematics: Pears the Blind (A101) prog 10).
8.05 Science information course: Measuring Electrons and Atoms (S101) prog 1).
8.30 Mathematics foundation course: Exploring Chance and Uncertainty (A100 (B)).
8.55 Science information course: Sound in View (S101) prog 6).
9.20 Mathematics foundation course: Interpretation (A100) prog 6).
9.45 Science foundation course: Ecological Sampling (S323) prog 4).
10.10 Science foundation course: The emergence of complexity: Men, Machines and Molecules (S101) prog 3).
10.35 An introduction to the chemistry of carbon compounds: Carbon-Carbon and Carbon-Oxygen Double Bonds (S251) prog 6).
11.00 An introduction to calculus: Themes and Conceptions (A100) prog 5).
11.30 Problems of philosophy: What is Truth? (A303) prog 5).
11.50 Social problems, community work and society: A Residential Placement (D305) prog 5).
12.15 Telecommunication systems: Noise (T351) prog 5).
12.40 Quantum theory and atomic structure: Atomic Spectra (S254).
13.30 Computer processing: Algorithms of Exponentials (T223) prog 5).
13.20 Nuclear Power: Nuclear Collisions in the United States (S364) prog 5).
13.50 Science and Belief: Newton (A365) prog 5).

RADIO 3 (VHF)

0.00 Cognitive psychology: The Development of Mental Rotation (A365) prog 4).
6.20 Rock Walling for the Big Apple (D301) prog 5).
6.45 Personality and learning: Methods of Study (A281) prog 5).
7.00 Making sense of society: Communication and Social Science (D101) prog 10).
7.20 The nature of chemistry: Chemistry and Chemistry (S101) prog 5).
7.30 Theatre of public: Cadence (T3) prog 5).
8.00 Open Forum 17.

RADIO 4 (VHF)

Either for Radio Scotland (5.45-6.00 am) and Radio Wales (6.10-6.30 am).

7.15 Science and the rise of technology since 1600: Electric Power and Electronic Control (AS361) prog 5).
7.35 Music: Harmony (A241) prog 3).
7.55 Politics, people and administration: The Civil Service (D334) prog 3).
8.15 Arts foundation course: Introduction to Drama and Theatre (A101) prog 11).
8.35 Technology and society: Technological Change (T252) prog 5).
8.55 Mathematics foundation course: Modelling Motion (A100) prog 5).
9.15 Personality and learning: Intelligence (A281) prog 5).
9.35 Moving environments: Design Principles (T301) prog 5).
9.55 Open Forum 18.

Alternative broadcasts for students in the Radio Scotland and Wales areas only

10.30 Cognitive psychology: The Development of Mental Rotation (A365) prog 4).
10.50 Rock Walling for the Big Apple (D301) prog 5).
11.15 Personality and learning: Methods of Study (A281) prog 5).
11.30 Making sense of society: Communication and Social Science (D101) prog 10).
11.50 The nature of chemistry: Chemistry and Chemistry (S101) prog 5).
12.00 Theatre of public: Cadence (T3) prog 5).
12.30 Open Forum 17.

RADIO 3 (VHF)

Alternative broadcasts for students in Scotland and mid-Wales only

24.00 International politics and foreign policy: Peace by Small States (D332) prog 5).
00.20 Art and environment: Inquiry (TAD202) prog 5).
00.40 Open Forum 18.

Monday April 21

BBC 2

5.40 Politics: economy and taxation: The Budget (D334) prog 5).
6.05 Science information course: Measuring Electrons and Atoms (S101) prog 1).
6.30 Mathematics foundation course: Exploring Chance and Uncertainty (A100 (B)).
6.55 Science information course: Sound in View (S101) prog 6).
7.20 Mathematics foundation course: Interpretation (A100) prog 6).
7.45 Science foundation course: Ecological Sampling (S323) prog 4).
8.10 Science foundation course: The emergence of complexity: Men, Machines and Molecules (S101) prog 3).
8.35 An introduction to the chemistry of carbon compounds: Carbon-Carbon and Carbon-Oxygen Double Bonds (S251) prog 6).
9.00 An introduction to calculus: Themes and Conceptions (A100) prog 5).
9.30 Problems of philosophy: What is Truth? (A303) prog 5).
9.50 Social problems, community work and society: A Residential Placement (D305) prog 5).
10.15 Telecommunication systems: Noise (T351) prog 5).
10.40 Quantum theory and atomic structure: Atomic Spectra (S254).
11.30 Computer processing: Algorithms of Exponentials (T223) prog 5).
11.20 Nuclear Power: Nuclear Collisions in the United States (S364) prog 5).
11.50 Science and Belief: Newton (A365) prog 5).

RADIO 3 (VHF)

0.00 Cognitive psychology: The Development of Mental Rotation (A365) prog 4).
6.20 Rock Walling for the Big Apple (D301) prog 5).
6.45 Personality and learning: Methods of Study (A281) prog 5).
7.00 Making sense of society: Communication and Social Science (D101) prog 10).
7.20 The nature of chemistry: Chemistry and Chemistry (S101) prog 5).
7.30 Theatre of public: Cadence (T3) prog 5).
8.00 Open Forum 17.

RADIO 4 (VHF)

Either for Radio Scotland (5.45-6.00 am) and Radio Wales (6.10-6.30 am).

7.15 Science and the rise of technology since 1600: Electric Power and Electronic Control (AS361) prog 5).
7.35 Music: Harmony (A241) prog 3).
7.55 Politics, people and administration: The Civil Service (D334) prog 3).
8.15 Arts foundation course: Introduction to Drama and Theatre (A101) prog 11).
8.35 Technology and society: Technological Change (T252) prog 5).
8.55 Mathematics foundation course: Modelling Motion (A100) prog 5).
9.15 Personality and learning: Intelligence (A281) prog 5).
9.35 Moving environments: Design Principles (T301) prog 5).
9.55 Open Forum 18.

Alternative broadcasts for students in the Radio Scotland and Wales areas only

10.30 Cognitive psychology: The Development of Mental Rotation (A365) prog 4).
10.50 Rock Walling for the Big Apple (D301) prog 5).
11.15 Personality and learning: Methods of Study (A281) prog 5).
11.30 Making sense of society: Communication and Social Science (D101) prog 10).
11.50 The nature of chemistry: Chemistry and Chemistry (S101) prog 5).
12.00 Theatre of public: Cadence (T3) prog 5).
12.30 Open Forum 17.

RADIO 3 (VHF)

Alternative broadcasts for students in Scotland and mid-Wales only

24.00 International politics and foreign policy: Peace by Small States (D332) prog 5).
00.20 Art and environment: Inquiry (TAD202) prog 5).
00.40 Open Forum 18.

Tuesday April 22

BBC 2

5.40 Understanding space and time: Relativity Today (S254).
6.05 Science information course: Measuring Electrons and Atoms (S101) prog 1).
6.30 Science information course: Sound in View (S101) prog 6).
6.55 Mathematics foundation course: Interpretation (A100) prog 6).
7.20 Science foundation course: Ecological Sampling (S323) prog 4).
7.45 Science foundation course: The emergence of complexity: Men, Machines and Molecules (S101) prog 3).
8.10 An introduction to the chemistry of carbon compounds: Carbon-Carbon and Carbon-Oxygen Double Bonds (S251) prog 6).
8.35 An introduction to calculus: Themes and Conceptions (A100) prog 5).
9.00 Problems of philosophy: What is Truth? (A303) prog 5).
9.20 Social problems, community work and society: A Residential Placement (D305) prog 5).
9.45 Telecommunication systems: Noise (T351) prog 5).
10.10 Quantum theory and atomic structure: Atomic Spectra (S254).
11.00 Computer processing: Algorithms of Exponentials (T223) prog 5).
11.30 Nuclear Power: Nuclear Collisions in the United States (S364) prog 5).
11.50 Science and Belief: Newton (A365) prog 5).

RADIO 3 (VHF)

0.00 Cognitive psychology: The Development of Mental Rotation (A365) prog 4).
6.20 Rock Walling for the Big Apple (D301) prog 5).
6.45 Personality and learning: Methods of Study (A281) prog 5).
7.00 Making sense of society: Communication and Social Science (D101) prog 10).
7.20 The nature of chemistry: Chemistry and Chemistry (S101) prog 5).
7.30 Theatre of public: Cadence (T3) prog 5).
8.00 Open Forum 17.

RADIO 4 (VHF)

Either for Radio Scotland (5.45-6.00 am) and Radio Wales (6.10-6.30 am).

7.15 Science and the rise of technology since 1600: Electric Power and Electronic Control (AS361) prog 5).
7.35 Music: Harmony (A241) prog 3).
7.55 Politics, people and administration: The Civil Service (D334) prog 3).
8.15 Arts foundation course: Introduction to Drama and Theatre (A101) prog 11).
8.35 Technology and society: Technological Change (T252) prog 5).
8.55 Mathematics foundation course: Modelling Motion (A100) prog 5).
9.15 Personality and learning: Intelligence (A281) prog 5).
9.35 Moving environments: Design Principles (T301) prog 5).
9.55 Open Forum 18.

Alternative broadcasts for students in the Radio Scotland and Wales areas only

10.30 Cognitive psychology: The Development of Mental Rotation (A365) prog 4).
10.50 Rock Walling for the Big Apple (D301) prog 5).
11.15 Personality and learning: Methods of Study (A281) prog 5).
11.30 Making sense of society: Communication and Social Science (D101) prog 10).
11.50 The nature of chemistry: Chemistry and Chemistry (S101) prog 5).
12.00 Theatre of public: Cadence (T3) prog 5).
12.30 Open Forum 17.

RADIO 3 (VHF)

Alternative broadcasts for students in Scotland and mid-Wales only

24.00 International politics and foreign policy: Peace by Small States (D332) prog 5).
00.20 Art and environment: Inquiry (TAD202) prog 5).
00.40 Open Forum 18.

Wednesday April 23

BBC 2

5.40 Education and the urban environment: Urban Multiculturism School to Work (E323) prog 5).
6.05 The development of technologies and the environment (T301) prog 5).
6.30 Science information course: Measuring Electrons and Atoms (S101) prog 1).
6.55 Science information course: Sound in View (S101) prog 6).
7.20 Mathematics foundation course: Interpretation (A100) prog 6).
7.45 Science foundation course: Ecological Sampling (S323) prog 4).
8.10 Science foundation course: The emergence of complexity: Men, Machines and Molecules (S101) prog 3).
8.35 An introduction to the chemistry of carbon compounds: Carbon-Carbon and Carbon-Oxygen Double Bonds (S251) prog 6).
9.00 An introduction to calculus: Themes and Conceptions (A100) prog 5).
9.30 Problems of philosophy: What is Truth? (A303) prog 5).
9.50 Social problems, community work and society: A Residential Placement (D305) prog 5).
10.15 Telecommunication systems: Noise (T351) prog 5).
10.40 Quantum theory and atomic structure: Atomic Spectra (S254).
11.30 Computer processing: Algorithms of Exponentials (T223) prog 5).
11.20 Nuclear Power: Nuclear Collisions in the United States (S364) prog 5).
11.50 Science and Belief: Newton (A365) prog 5).

RADIO 3 (VHF)

0.00 Cognitive psychology: The Development of Mental Rotation (A365) prog 4).
6.20 Rock Walling for the Big Apple (D301) prog 5).
6.45 Personality and learning: Methods of Study (A281) prog 5).
7.00 Making sense of society: Communication and Social Science (D101) prog 10).
7.20 The nature of chemistry: Chemistry and Chemistry (S101) prog 5).
7.30 Theatre of public: Cadence (T3) prog 5).
8.00 Open Forum 17.

RADIO 4 (VHF)

Either for Radio Scotland (5.45-6.00 am) and Radio Wales (6.10-6.30 am).

7.15 Science and the rise of technology since 1600: Electric Power and Electronic Control (AS361) prog 5).
7.35 Music: Harmony (A241) prog 3).
7.55 Politics, people and administration: The Civil Service (D334) prog 3).
8.15 Arts foundation course: Introduction to Drama and Theatre (A101) prog 11).
8.35 Technology and society: Technological Change (T252) prog 5).
8.55 Mathematics foundation course: Modelling Motion (A100) prog 5).
9.15 Personality and learning: Intelligence (A281) prog 5).
9.35 Moving environments: Design Principles (T301) prog 5).
9.55 Open Forum 18.

Alternative broadcasts for students in the Radio Scotland and Wales areas only

10.30 Cognitive psychology: The Development of Mental Rotation (A365) prog 4).
10.50 Rock Walling for the Big Apple (D301) prog 5).
11.15 Personality and learning: Methods of Study (A281) prog 5).
11.30 Making sense of society: Communication and Social Science (D101) prog 10).
11.50 The nature of chemistry: Chemistry and Chemistry (S101) prog 5).
12.00 Theatre of public: Cadence (T3) prog 5).
12.30 Open Forum 17.

RADIO 3 (VHF)

Alternative broadcasts for students in Scotland and mid-Wales only

24.00 International politics and foreign policy: Peace by Small States (D332) prog 5).
00.20 Art and environment: Inquiry (TAD202) prog 5).
00.40 Open Forum 18.

RADIO 4 (VHF)

23.30 Oceanography: Tides (S351) prog 5).
00.50 Science and the rise of technology since 1600: Science and Hypothesis (AS361) prog 4).

RADIO 3 (VHF)

Alternative broadcasts for students in Scotland and mid-Wales only

24.00 Problems of philosophy: Truth (A303) prog 5).
00.20 Open Forum 478-336 BG: Colours (A24 prog 5).

Thursday April 24

BBC 1

0.40 Personality and learning: Intelligence (A281) prog 5).
7.05 Technology and society: Technological Change (T252) prog 5).
7.30 Mathematics foundation course: Modelling Motion (A100) prog 5).

BBC 2

0.40 Introduction to pure phonetics (D103) prog 5).
7.05 Politics: economy and taxation: The Budget (D334) prog 5).
7.30 Politics, people and administration: The Civil Service (D334) prog 3).
8.00 Economics: Macroeconomics (A305) prog 5).
8.25 Economics of industrial relations (A305) prog 5).
8.50 Politics, people and administration: The Civil Service (D334) prog 3).
9.15 Management: Public Budgeting and Financial Administration (D301) prog 5).
9.40 Management—and who are also capable of teaching a course in Social Psychology. Outline to be assumed by August 1, 1980 and not later than September 1, 1980.
10.05 Technology and society: Technological Change (T252) prog 5).
10.30 Mathematics foundation course: Modelling Motion (A100) prog 5).
11.00 Personality and learning: Intelligence (A281) prog 5).
11.25 Moving environments: Design Principles (T301) prog 5).
11.50 Open Forum.

RADIO 3 (VHF)

0.00 Cognitive psychology: The Development of Mental Rotation (A365) prog 4).
6.00 Rock Walling for the Big Apple (D301) prog 5).
6.20 Personality and learning: Methods of Study (A281) prog 5).
6.40 Making sense of society: Communication and Social Science (D101) prog 10).
7.00 The nature of chemistry: Chemistry and Chemistry (S101) prog 5).
7.20 Theatre of public: Cadence (T3) prog 5).
7.40 Open Forum 17.

RADIO 4 (VHF)

Either for Radio Scotland (5.45-6.00 am) and Radio Wales (6.10-6.30 am).

7.15 Science and the rise of technology since 1600: Electric Power and Electronic Control (AS361) prog 5).
7.35 Music: Harmony (A241) prog 3).
7.55 Politics, people and administration: The Civil Service (D334) prog 3).
8.15 Arts foundation course: Introduction to Drama and Theatre (A101) prog 11).
8.35 Technology and society: Technological Change (T252) prog 5).
8.55 Mathematics foundation course: Modelling Motion (A100) prog 5).
9.15 Personality and learning: Intelligence (A281) prog 5).
9.35 Moving environments: Design Principles (T301) prog 5).
9.55 Open Forum 18.

Alternative broadcasts for students in the Radio Scotland and Wales areas only

10.30 Cognitive psychology: The Development of Mental Rotation (A365) prog 4).
10.50 Rock Walling for the Big Apple (D301) prog 5).
11.15 Personality and learning: Methods of Study (A281) prog 5).
11.30 Making sense of society: Communication and Social Science (D101) prog 10).
11.50 The nature of chemistry: Chemistry and Chemistry (S101) prog 5).
12.00 Theatre of public: Cadence (T3) prog 5).
12.30 Open Forum 17.

RADIO 3 (VHF)

Alternative broadcasts for students in Scotland and mid-Wales only

24.00 International politics and foreign policy: Peace by Small States (D332) prog 5).
00.20 Art and environment: Inquiry (TAD202) prog 5).
00.40 Open Forum 18.

Friday April 25

BBC 1

5.40 Systems performance: Home Energy and systems (T301) prog 5).
6.05 Technology and society: Technological Change (T252) prog 5).
6.30 Control of technology: Control of Technology in Industry (T301) prog 5).
7.05 Intervention: Intervention in Industry (T301) prog 5).
7.30 Intervention: Subsidies (T301) prog 5).
8.00 Elementary science: Hexanone (S351) prog 1).

BBC 2

5.40 Language development: Early Phonological Development (D103) prog 5).
7.05 Politics: economy and taxation: The Budget (D334) prog 5).
7.30 Materials processing: Polymers (T301) prog 5).
8.00 Industrial processes: Iron and Steel (T301) prog 5).
8.25 Earth science: Earthquakes (S351) prog 5).
8.50 Chemistry: Structure and Reactivity (S251) prog 5).
9.15 Chemistry: Chemistry of Life (S251) prog 5).
9.40 Chemistry: Chemistry of Cycles (S251) prog 5).
10.05 Chemistry: Chemistry of Acids and Bases (S251) prog 5).
10.30 Chemistry: Chemistry of Carbon (S251) prog 5).
11.00 Chemistry: Chemistry of Life (S251) prog 5).
11.25 Chemistry: Chemistry of Cycles (S251) prog 5).
11.50 Open Forum.

RADIO 3 (VHF)

0.00 Cognitive psychology: The Development of Mental Rotation (A365) prog 4).
6.20 Rock Walling for the Big Apple (D301) prog 5).
6.45 Personality and learning: Methods of Study (A281) prog 5).
7.00 Making sense of society: Communication and Social Science (D101) prog 10).
7.20 The nature of chemistry: Chemistry and Chemistry (S101) prog 5).
7.30 Theatre of public: Cadence (T3) prog 5).
8.00 Open Forum 17.

RADIO 4 (VHF)

Either for Radio Scotland (5.45-6.00 am) and Radio Wales (6.10-6.30 am).

7.15 Science and the rise of technology since 1600: Electric Power and Electronic Control (AS361) prog 5).
7.35 Music: Harmony (A241) prog 3).
7.55 Politics, people and administration: The Civil Service (D334) prog 3).
8.15 Arts foundation course: Introduction to Drama and Theatre (A101) prog 11).
8.35 Technology and society: Technological Change (T252) prog 5).
8.55 Mathematics foundation course: Modelling Motion (A100) prog 5).
9.15 Personality and learning: Intelligence (A281) prog 5).
9.35 Moving environments: Design Principles (T301) prog 5).
9.55 Open Forum 18.

Alternative broadcasts for students in the Radio Scotland and Wales areas only

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12.00 Theatre of public: Cadence (T3) prog 5).
12.30 Open Forum 17.

RADIO 3 (VHF)

Alternative broadcasts for students in Scotland and mid-Wales only

24.00 International politics and foreign policy: Peace by Small States (D332) prog 5).
00.20 Art and environment: Inquiry (TAD202) prog 5).
00.40 Open Forum 18.

Classified Advertisements Index

Appointments vacant
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UCG Coláiste na hOllscoile Gaillimh

JUNIOR LECTURESHIP IN BOTANY

Applications are invited for the above post.

Salary scale, £6,234 by 10 to £8,570.

Applications will be particularly welcome from candidates having teaching and research experience in Terrestrial Plant Ecology.

Closing date for receipt of applications, 16th May, 1980.

Further information may be obtained from Registrar, University College, Galway, Ireland.

UNIVERSITY OF CAMBRIDGE

Department of Chemical Engineering

UNIVERSITY LECTURER or UNIVERSITY ASSISTANT LECTURER

from 1 October 1980, or soon thereafter, to take part in the teaching programme of the Department, and in undertake research in a field of his or her own choice. Applications considered from graduates in chemical engineering or other branches of engineering, or in chemistry, biochemistry, or physics. Industrial experience *could be an advantage. The Department is developing a programme of teaching and research in biotechnology*; this is a field with might interest an applicant but those with other interests are also welcome to apply.

Appointment for three years with the possibility of reappointment, for a Lecturer, to retiring age, or, for an Assistant Lecturer, for two years. Stipends: Lecturer £7,073 to £11,171, Assistant Lecturer £5,369 to £6,736.

Further information and application forms from Professor J. F. Davidson, Department of Chemical Engineering, Pembroke Street, Cambridge CB2 3RA. Closing date 30 September, 1980.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

(University of London)

Keppel Street (Gower Street), London WC1E 7HT

The appointment of

SECRETARY OF THE SCHOOL

will fall vacant in October 1980 on the retirement of the present Secretary. Applications are invited from candidates with relevant academic and/or professional qualifications who have had substantial experience of general management in the universities, the public service or industry.

The salary will be in Group 4 of the universities' administrative scales and will be not less than £12,824 plus £740 London Allowance, with superannuation under U.S.S.

Further details of duties, terms of appointment, etc., and application forms may be obtained from the Secretary. The closing date for applications is 28th April 1980.

BRISTOL

THE UNIVERSITY

FACULTY OF ENGINEERING

LECTURESHIP IN FLUID MECHANICS

The University wishes to appoint a Lecturer/Senior Lecturer in FLUID MECHANICS within the Faculty of Engineering, from 1st August, 1980, or as soon thereafter as can be arranged.

Applications are invited from those with professional and/or research and teaching experience in any topics or fluid mechanics which lay relevance to civil or ocean/nuclear engineering. Preference will be given to applicants who can contribute to one or other of these two departments within the Faculty.

Salary will be according to age, qualifications and experience on the scale £6,234-£8,570 (Lecturer) or £8,571-£10,464 (Senior Lecturer). Superannuation under U.S.S.

Further details of duties, terms of appointment, etc., and application forms may be obtained from the Registrar (Staffing Officer), The University College of Wales, Aberystwyth SY23 2AX, to whom they should be returned not later than Friday, May 2, 1980.

LONDON

BIRKBECK COLLEGE

(The University)

LECTURESHIP IN CHEMISTRY

Applications are invited for the above post from 1st October 1980. Outstanding candidates with experience in any branch of PHYSICAL CHEMISTRY will be considered but applications from those with teaching or research interests in Chemical Kinetics will be especially welcome.

Starting salary will be on the lecturer's part of the salary scale £6,234-£8,570 (plus £740 per annum London Weighting).

A full curriculum vitae and the names of two referees should be sent by post, not later than 25th May, 1980, to the Assistant Secretary (Personnel), Birkbeck College, Malet Street, London WC1E 7HX, telephone 01-580 6822 ext. 292, from whom further details may be obtained.

CARDIFF

UNIVERSITY COLLEGE

Applications are invited for the post of ASSISTANT LECTURER in POST-MEDIEVAL ENGLISH LITERATURE in the DEPARTMENT of ENGLISH. Preference will be given to

Universities continued

MIDDLESEX
BRUNEL UNIVERSITY

DEPARTMENT OF DESIGN TECHNOLOGY

HEADSHIP

Applications are invited for the post of Reader, with effect from 1st September, 1980 in the new Department of Design Technology, which is taking over responsibility for some of the present courses at Shoreditch College. The successful applicant will probably have a postgraduate qualification in the Design field, from an appropriate department, have practical teaching and or industrial experience, and will be expected to stimulate research projects and set up postgraduate courses in the Department.

Salary in the Reader Scale £10,132 to £12,564, plus £2,000 London Allowance, with U.S.S. benefits

LECTURESHIP

Applications are invited for the post of Lecturer, with effect from 1st September, 1980, in the new Department of Design Technology, which is taking over responsibility for some of the present courses at Shoreditch College. The successful applicant will be expected to undertake the responsibility for Design development studies at undergraduate level.

Salary in the Lecturer scale £5,052 to £10,671, plus £2,000 London Allowance, with U.S.S. benefits.

Write for application form and further particulars to the Establishment Secretary, Brunel University, Uxbridge, Middlesex UB8 3PH, or telephone Uxbridge 37188 extension 29. Closing date: 23rd May, 1980.

NEWCASTLE UPON TYNE
THE UNIVERSITY

DEPARTMENT OF HISTORY

Applications are invited for the post of LECTURER in MEDIEVAL HISTORY, with normal tenure within the period 1100 to 1500 A.D.

Salary will be at an appropriate point on the Lecturer Scale £5,052 to £10,671 per annum, according to age, qualifications and experience. Membership of the appropriate University superannuation scheme will be required.

Further particulars may be obtained from the Senior Assistant Registrar (Ref. A), The University, 6 Kensington Terrace, Newcastle upon Tyne NE1 7RU, with whom applications (three copies) together with the names and addresses of three referees should be lodged not later than May 9, 1980. Please quote reference 11/80.

RHODESIA
THE UNIVERSITY OF ZIMBABWE

LECTURESHIPS (SENIOR LECTURESHIPS 4 POSTS) IN ELECTRICAL ENGINEERING

Applications are invited from persons with Engineering degrees and postgraduate experience. Expertise desirable in Power Electronics, Electro - magnetic/Telecommunications, Analogue Electronics, Electrical Machines.

Salary scales (approx. sterling): Senior Lecturer £8,152 to £10,362 (Ref. 251/1); Lecturer Grade II £6,217 to £8,616; Lecturer Grade I £4,808 to £6,098 (Ref. 251/2).

Both permanent - pensionable terms. Free housing or one of two rent subsidies; one of two rent contracts; free medical care.

Permanent - Pensionable terms. Family passages and allowance towards transport of personal effects. Assistance with accommodation. Unfurnished accommodation is available for period of at least three years, principally recruited from outside Rhodesia. Salaries, Travel Grants, Transport allowances, Superannuation and medical aid schemes, Short-Term Contracts: family passages and allowance towards transport of effects. Assistance with accommodation for periods recruited from outside Rhodesia.

Applicants (six copies) required, giving full particulars, including full name, date of birth, etc., qualifications, employment, present and previous salary, date of availability and the names of three referees should be lodged with the Secretary for Education (Appts.), 66 Florden Road, Lorrain, WC1N 1DH, or the Registrar of the University.

Applications close on 30th May, 1980.

THE OPEN UNIVERSITY
FACULTY OF TECHNOLOGY

PROFESSOR OF ENGINEERING MECHANICS

Applications are invited from suitably qualified persons with tutorial and experience which will enable them to provide leadership in both teaching and research in the field of Engineering Mechanics.

Salary will be within the normal UGC approved scale, Personal Chair plus U.S.S. benefits.

Further particulars are available from Mr. A. J. Stockham, Assistant Secretary 14/09/31, Faculty of Technology, The Open University, Walton Hall, Milton Keynes, MK7 6AA, or by telephone from Milton Keynes 674911; there is a 24 hour answering service on 65468.

Closing date for applications: 30th May, 1980.

Fellowships and Studentships

PLYMOUTH POLYTECHNIC
Faculty of Social Science

Department of Social and Political Studies

SSRC RESEARCH LINKED STUDENTSHIP

Applications are invited for a two years studentship starting in October 1980 to work on aspects of social mobility in collaboration with the supervisors Geoff Payne and David Dunkerley.

Applicants should hold or expect to obtain this summer a good honours degree in Sociology or Social Sciences.

Application forms to be returned by Friday 9th May 1980 can be obtained with further particulars from the Personnel Officer, Plymouth Polytechnic, Drake Circus, Plymouth PL4 8AA.

STIRLING
THE UNIVERSITY

DEPARTMENT OF MANAGEMENT, POLITICS AND TECHNOLOGY STUDIES

LECTURESHIP

Applications are invited for this vacant position, where teaching commitments will centre on undergraduate and postgraduate teaching in areas of management, politics and technology. Preference will be given to candidates with a strong interest in management science and cognate disciplines, preferably combined with a relevant research specialism, or engineering, or a relevant industrial background. Experience with small companies would also be an advantage.

One of the lecturer posts in the Department is currently held on a fixed term basis. Applicants for this post should be able to provide a strong teaching and research contribution, but membership of the University superannuation scheme will be required.

Further particulars may be obtained from the Senior Assistant Registrar (Ref. T), The University, 6 Kensington Terrace, Newcastle upon Tyne NE1 7RU, with whom applications (three copies) together with the names and addresses of three referees should be lodged not later than May 9, 1980. Please quote reference 11/80.

OXFORD
ST. CROSS COLLEGE

GRADUATE SCHOLARSHIPS

The college proposes to make elections to not more than six Graduate Scholarships of a maximum value of £750 per annum, tenable for one, two or three years from 1 October 1980. The scholarships, which are intended to be supplementary awards, are open to men and women working or intending to work for a postgraduate degree at the University.

Further particulars and application forms may be obtained from the Senior Tutor. The closing date for the receipt of applications is 30 April.

ULSTER
THE NEW UNIVERSITY

LECTURER IN COMMUNICATION STUDIES

Applications are invited for a full-time lecturership in Communication Studies which is tenable from 1st October, 1980. The person appointed will be required to contribute to the teaching and development of the Communication Studies programme at both undergraduate and postgraduate levels. Particular interest in the use of printed media would be an advantage.

Salary scale (with effect 1/9/79): £4,808 to £10,464 per annum.

Further particulars may be published from The Registrar, The New University of Ulster, Coleraine, Northern Ireland, BT52 1SA, to whom applications (quoting Ref. 80/231) should be sent not later than 12th May, 1980.

WARWICK
THE UNIVERSITY

TECHNICAL AND DESIGN MANAGER

Applications are invited for this post in the Department of Engineering (tenable from 1st July, 1980 or as soon as possible thereafter. Candidates should be chartered engineers engineers or equivalent, with manufacturing, design and management experience. The duties include responsibility for the departmental technical staff, extensive workshop facilities and a design and technical advisory service.

The appointment is on the Administrative Grade II Scale £8,427-£10,484 p.a.

Further particulars and application forms from the Secretary and Registrar, University of Warwick, Coventry CV4 7AL, quoting Reference No. 35/11 80 L. Telephone enquiries 0203 24011, extension 3047. Closing date for receipt of applications 2nd May, 1980.

THE OPEN UNIVERSITY
FACULTY OF EDUCATIONAL STUDIES

Applications are invited for a temporary post in the above Faculty.

RESEARCH FELLOW EVALUATION STUDIES

The person appointed will join the course team developing training materials for part of the "Governing Schools Project", which is sponsored by a grant from the Department of Education and Science. The appointee will have major responsibility for the evaluation part stage of the Project and for the institutionalisation of course materials.

Candidates for this Fellowship should have a relevant academic background, sound research experience and an ability to establish good working relationships with outsiders at all levels of the educational service.

Preference will be given to those applicants who are liable to be seconded from their present post to work at the University. The successful candidate will be expected to take up post on May 1/1/80, or at the earliest possible date. The appointee may be seconded to the Post Experience Courses Unit for all or part of their contract.

Salary will be on the scale £6,052-£8,707 or £8,084-£11,184.

Further particulars (form and further particulars are available from Personnel Officer, Faculty of Educational Studies, Faculty of Educational Studies, The Open University, Walton Hall, Milton Keynes MK7 6AA or telephone Milton Keynes (0908) 674911 ext. 2066 (24 hour answering service on 65468).

Closing date for applications: 6th May, 1980.

OXFORD
EXETER COLLEGE

FELLOWSHIP IN ENGLISH LITERATURE

The college proposes to elect to an Official Fellowship in English Literature, tenable from October 1, 1980, or as soon thereafter as possible. Candidates should have an interest in the literature of the period 1600-1660.

Applications with the names of not more than three referees should be sent not later than May 17, 1980, to the Rector from whom further particulars may be obtained.

Polytechnics

BRIGHTON POLYTECHNIC
DEPARTMENT OF MECHANICAL & PRODUCTION ENGINEERING

Lecturer II
Senior Lecturer
in Heat Transfer

LII £4,808-£7,098 SL: £7,092-£8,871.

To lecture mainly Thermodynamics with particular reference to Heat Transfer to Degree, Honours Degree and Higher Certificate students.

Applicants should be Honours Graduates in Mechanical Engineering with suitable experience in industry or research relevant to heat transfer engineering. Candidates with extensive experience of applied thermodynamics / fluids will be considered. The successful candidate will be expected to develop a field of research possibility in association with a local company.

A higher degree is desirable but not essential.

For further details and application forms please apply to the Personnel Officer, Brighton Polytechnic, Moulsecoomb, Brighton BN2 4AT. Tel: Brighton 693655 Ext. 2837. Closing date: 30th April, 1980.

LONDON SE1
POLYTECHNIC OF THE SOUTH BANK

Borough Road, London, SE1 0AA

DEPARTMENT OF ACCOUNTANCY AND FINANCE

PRINCIPAL LECTURER IN TAXATION (Ref. AF.5)

Applications are invited for this appointment as academic subject leader for taxation resulting from the retirement of Mr. J. H. Bowman, who will should hold recognised professional qualifications (Chartered Accountants, Chartered Certified Accountants, Institute of Taxation and Institute of Cost and Management Accountants) and have experience gained in public practice or in the Inland Revenue.

Salary will be within the range £8,625 to £10,464 (Inner London Allowance £1,000) plus U.S.S. benefits.

Further particulars and application forms (max. 1 page) from the Registrar, Polytechnic of the South Bank, Borough Road, London SE1 0AA.

BRIGHTON POLYTECHNIC
FACULTY OF SOCIAL & CULTURAL STUDIES

Department of Humanities

Temporary Lecturer in English Medieval History

£4,808-£7,098.

Required for the academic year 1980/81 to teach within the degree programmes. Candidates will be expected to teach outline courses on the period 1000-1485 and to offer a more specialised course in English Art in the eleventh century. Some teaching experience and the ability to contribute to the U.C.C.A. course in History would be an advantage.

Further details and application forms from the Personnel Officer, Brighton Polytechnic, Moulsecoomb, Brighton, England BN2 4AT. Tel: Brighton 693655, Ext. 2609. Closing date 24 April, 1980.

LONDON W1
THE POLYTECHNIC OF CENTRAL LONDON

SCHOOL OF LAW

LECTURER II

Salary: £4,808-£7,098 (Ref. 80/LW/1)

Applications are invited for the above post from persons who are qualified to teach in the areas of Commercial Law, Company Law and Jurisprudence.

Applicants should have good academic qualifications and experience in teaching and should be able to demonstrate good communication skills.

Further details and application forms (quoting reference above) may be obtained by sending a stamped addressed envelope to the Principal's Secretary, The Polytechnic of Central London, 309 Regent Street, London W1R 8AL. Telephone 01-580 2060 ext. 2139.

Closing date for receipt of completed application forms: 30 April 1980.

PRESTON
THE POLYTECHNIC

Applications are invited for the post of Senior Lecturer in Electrical Engineering, preferably in power electronics, tenable from 1st September, 1980.

Appropriate salary scale £8,625-£10,464 (Inner London Allowance £1,000) plus U.S.S. benefits.

Further particulars and application forms (max. 1 page) from the Personnel Officer, The Polytechnic, Preston PR1 2TQ.

Closing date for receipt of completed application forms: 30 April, 1980.

Polytechnics continued

LEEDS POLYTECHNIC

Applications are invited for the following posts:—

CARNEGIE SCHOOL OF PHYSICAL EDUCATION AND HUMAN MOVEMENT STUDIES

LECTURER II IN PHYSICAL EDUCATION, MOVEMENT AND RECREATION STUDIES—3 POSTS

Applicants should be well qualified and able to teach to degree level in one or more of: Athletics, Dance, Women's Games, Olympic Gymnastics, Outdoor Activities, Biomechanics, Philosophy, Recreation Management.

For informal discussion contact Head of School—C. E. Bond, Tel.: 0532 759081.

SCHOOL OF HEALTH AND APPLIED SCIENCES

LECTURER II IN NURSING

SAN, who is preferably a graduate in a relevant discipline, to teach nursing to Honours degree level. Recent clinical experience in acute nursing and an interest in nursing research an advantage.

LECTURER II IN NUTRITION/DIETETICS

Applicants should have a particular interest in community/district dietetics and nutrition and developing communications skills relevant to dietetics and nutrition.

SCHOOL OF HOSPITALITY MANAGEMENT AND HOME ECONOMICS

LECTURER II IN CATERING MANAGEMENT (FINANCIAL CONTROL)

Able to teach financial control up to degree and post graduate/post experience level. Qualifications required in management accounting or business studies to degree standard with significant financial element together with appropriate experience in food and accommodation industry.

LECTURER II IN HEALTH EDUCATION

Academically qualified in Health Education and able to offer one or more of the following: Research methods and research design, behavioural sciences applied to health, epidemiology and community health.

SCHOOL OF MATHEMATICS AND COMPUTING

LECTURER II/SENIOR LECTURER IN COMPUTING—2 POSTS

Able to teach up to degree level and with an interest in short course and consultancy development. Preference given to applicants with experience in Systems Software, Small Computer Architecture, Commercial Data Processing especially those involving Systems Analysis and Design.

Salary Scales:

Senior Lecturer: £7,092-£8,280 (bar) £8,871.

Lecturer II: £4,808-£7,098.

Details from:

The Services Officer, Leeds Polytechnic, Calverley Street, Leeds, LS1 3HE. Tel.: 0532 462355.

Closing Date: 30th April, 1980. Please quote S.S.S.

Sheffield City Polytechnic
Department of Electrical and Electronic Engineering

RESEARCH ASSOCIATE/ASSISTANT IN CONTROL ENGINEERING HOT ROLLING MILL CONTROL AND SIMULATION

This post is supported by Davy-Loewy Limited of Sheffield and concerned with the modelling and multivariable control of a rolling mill.

The completion date of the project is 1982, but the post is for a fixed period of twelve months. The salary will be in the range £3,000-£3,600.

Application forms and further details are available from the Personnel Officer (Ref. THEE/48), Sheffield City Polytechnic, Howard Street, Sheffield S1 2SB, or by phoning 0742 720911 ext. 387. Completed forms should be returned by 24 April 1980.

LONDON
POLYTECHNIC OF THE SOUTH BANK

Borough Road, London, SE1 0AA

SENIOR LECTURER/LECTURER

DEPARTMENT OF ELECTRICAL ENGINEERING (Ref. K14)

Required to teach students in B.Sc. (Hons.) and Higher Diploma courses in Electrical Engineering.

A particular interest in computer applications, methods of measurement and control is desirable, or alternatively in the fields of Power Engineering, Plasma Rocket Propulsion or Environmental Economics.

Applicants with industrial and/or research experience required and employment as Senior Lecturer or Lecturer.

Salary: Lecturer: to review from 1st April, 1980 (as Senior Lecturer) £4,808 to £7,098 (Inner London Allowance £1,000 plus U.S.S. benefits).

Senior Lecturer: £7,092 to £8,871 (Inner London Allowance £1,000 plus U.S.S. benefits).

Further particulars and application forms from the Staffing Officer, Polytechnic of the South Bank, Borough Road, London, SE1 0AA.

LONDON EC3
CITY OF LONDON POLYTECHNIC

DEPARTMENT OF BANKING STUDIES

Applications are invited for the post of Senior Lecturer in the Department of Banking Studies, to teach in Economics and Computer Studies.

Applicants should have good academic qualifications and experience in teaching and should be able to demonstrate good communication skills.

Further details and application forms (quoting reference above) may be obtained by sending a stamped addressed envelope to the Principal's Secretary, The Polytechnic of Central London, 309 Regent Street, London W1R 8AL. Telephone 01-580 2060 ext. 2139.

Closing date for receipt of completed application forms: 30 April 1980.

LONDON SE18
THAMES POLYTECHNIC

SCHOOL OF MATHEMATICS, STATISTICS AND COMPUTING

Applications are invited for the following posts:

(1) LECTURER II/SENIOR LECTURER IN STATISTICS

(2) LECTURER II/SENIOR LECTURER IN COMPUTER SCIENCE (2 posts)

(3) LECTURER II/ASSISTANT LECTURER (Full-time Lecturer II post in Computing)

(1) Applicants should be graduates with good qualifications in statistics and have teaching, industrial or research experience in statistics to degree level. Preference will be given to candidates with experience in life sciences or statistics applied to Business and Social Science.

(2) Applicants should be graduates with industrial, commercial or research experience being an advantage. The teaching commitment includes many aspects of computer work, from introductory programming for non-specialists to work with final year degree and diploma students in Computer Science.

(3) Applicants should be graduates in suitable disciplines with relevant industrial experience, particularly in Systems Analysis and Data Processing.

The School runs several degree and diploma courses in Business Studies and Computer Science. Applicants should have a strong interest in teaching these courses and be able to contribute to the development of these courses.

Further particulars and application forms and further details from Staffing Officer, Thames Polytechnic, Wellington Street, London SE18 6PF, to be returned by 6th May.

LONDON SE1
POLYTECHNIC OF THE SOUTH BANK

Borough Road, London, SE1 0AA

DEPARTMENT OF BUSINESS STUDIES

SENIOR LECTURER/LECTURER II IN QUANTITIVE ANALYSIS (Ref. K13)

Required to teach Business Statistics and Computing to students mainly on degree and H.N.D. level courses, HND Management and Control and Computer Science Technician Courses. Industrial and/or research experience is desirable.

Salary: Lecturer II £4,808 to £7,098. Senior Lecturer £7,092 to £8,871 (each rising Inner London Allowance £1,000). An appointment will be made within the salary range £4,808-£8,280.

Further particulars and application forms, which are obtainable within 14 days of the appearance of this advertisement, are available from the Personnel Section, Polytechnic of the South Bank, Borough Road, London, SE1 0AA.

LEICESTER
THE POLYTECHNIC

SCHOOL OF SPEECH PATHOLOGY

LECTURER II (Post No 353)

Required from 1st September 1980 to lecture on components of the degree in Speech Pathology course, includes speech disorders in communication and supervise clinical course work. Opportunities are for research and development of specialised materials. Applicants should hold a Recognised Speech Therapy qualification.

Commencing salary according to experience, qualifications on Salary Scale LII £4,808 to £7,098 (Inner London Allowance £1,000) plus U.S.S. benefits.

Application forms and further details from Staffing Officer, Polytechnic, Leicester LE1 9BH. Closing date: 30 May 1980.

LONDON SE1
POLYTECHNIC OF THE SOUTH BANK

Borough Road, London, SE1 0AA

DEPARTMENT OF BUSINESS STUDIES

PART-TIME LECTURER IN MARKETING/MARKET RESEARCH

Required for work seeking to teach Marketing and Market Research to students on degree B.E.C. Higher Diploma and Institute of Marketing Courses.

Consultant to Head of Department of Business Studies, Polytechnic of the South Bank, Borough Road, London, SE1 0AA. Telephone: 01-928 8989 ext. 2421.

TERSSINE
THE POLYTECHNIC

DEPARTMENT OF ELECTRICAL INSTRUMENTATION AND CONTROL ENGINEERING

Due to expansion in the Department applications are invited for two posts of:

LECTURER II SENIOR LECTURER II in INSTRUMENTATION ENGINEERING and Control and Systems Engineering.

To join the instrumentation and Control Engineering Teaching Group which is primarily responsible for the degree B.Sc. (Hons.) Instrumentation and Control Engineering, HND Measurement and Control and Computer Science Technician Courses. Industrial and/or research experience is desirable.

Salary: Lecturer II £4,808 to £7,098. Senior Lecturer £7,092 to £8,871 (each rising Inner London Allowance £1,000). An appointment will be made within the salary range £4,808-£8,280.

Further particulars and application forms, which are obtainable within 14 days of the appearance of this advertisement, are available from the Personnel Section, Teesside Polytechnic, Borough Road, Middlesbrough, Cleveland TS1 3BA.

Colleges of Higher Education

CHELTENHAM
THE COLLEGE OF ST. PAUL AND ST. MARY

Applications are invited from suitably qualified candidates for the following appointment in this Church of England College of 1,240 students, commencing will be at first, degree teaching and a commitment to research is important.

LECTURER II SENIOR LECTURER IN PHYSICAL GEOGRAPHY OR GEOLOGY

This is an opportunity for an able candidate with research experience to develop a field of physical Geography or Geology. Applicants should specify their particular field but an ability to offer one from economic geology, environmental geology, geomorphology, soils, meteorology, quantitative methods would be an advantage. Industrial experience would be welcomed. This specialist will join a team of twelve teaching B.Sc. (Geography/Geology degree to honours level.

Further information may be obtained from The Principal's Secretary, The College of St. Paul and St. Mary, The Park, Cheltenham GL50 2RH, to whom applications should be returned not later than Wednesday, 30 April. Please enclose large stamped addressed envelope.

WEST SUSSEX
INSTITUTE OF HIGHER EDUCATION

(Incorporating Bishop Otter College, Chichester and Bognor Regis College)

Required for 1st September 1980:

LECTURER II/SL II IN MATHEMATICS

A Mathematics Graduate with a teaching training qualification and/or advanced study in education to John 2 of the only six to take an active part in:

(i) A certificate course of initial training in S.E.P. and P.C.E. programmes;

(ii) The development of a mathematics centre for teachers, students and children.

It is essential for applicants to have had recent experience of teaching mathematics with teachers, particularly at primary level.

Further details and application forms from The Director's Secretary, West Sussex Institute of Higher Education, The Bognor Regis School, West Bognor Regis, West Sussex (Telephone Bognor Regis 822081). The closing date will be two weeks after the appearance of this advertisement.

LONDON, W.5
EALING COLLEGE OF HIGHER EDUCATION

LECTURER II IN ACCOUNTING STUDIES. Applications are invited from Accountants who can offer a lively approach to teaching professional qualifications (Chartered Accountants, Institute of Cost and Management Accountants) to applicants to Examinations in a wide range of courses in Accounting Studies (degree, higher and professional courses and post experience programmes).

LECTURER II IN LIBRARY MANAGEMENT. Applicants must have a minimum of 5 years experience, preferably in a public library, involving a commitment to service essential. Additional qualification in management, lecturing or training desirable.

Salary: (a) £4,415 to £6,305 (b) Principal Lecturer £7,092 to £8,871 (c) Senior Lecturer £7,092 to £8,871 inclusive of Inner London Allowance.

Further details and application forms (specify post required) from Personnel Officer, Ealing College of Higher Education, St. Mary's Road, London W5 5RF. Closing date: May 2, 1980.

HAMPSHIRE
SOUTHAMPTON COLLEGE OF HIGHER EDUCATION

FACULTY OF ART AND DESIGN

Principal Lecturer for Printing and Design Courses

Applications are invited for the above post in the Department of Design with particular responsibilities for the organisation and development of Printing and Design Courses at all levels. The Principal Lecturer would also be expected to play a leading part in a proposed B.A. (Hons.) Graphic Communication Degree.

Lecturer I in Lithographic Machine Printing

The post is aimed to suitably qualified persons having a City and Guilds Advanced Craft Certificate in Litho Printing or equivalent, and with good industrial experience in Lithographic Plate-making and Machine Printing.

Lecturer II in Design Crafts

To teach Three Dimensional Design for production and related studies in packaging design to graphic design students on PATEC and SIAP courses.

Lecturer I in Visual Communication/Medical Illustration

A qualified Medical Artist/Graphic Illustrator specialist is required to teach on College Diploma and SIAP courses.

Application forms and further details from the Principal, Southampton College of Higher Education, East Park Terrace, Southampton, SO9 4WW (please include stamped addressed A4 envelope) to whom they should be returned within 14 days of the appearance of this advertisement.

SOUTH GLAMORGAN COUNTY COUNCIL
SOUTH GLAMORGAN INSTITUTE OF HIGHER EDUCATION (CARDIFF)

Faculty of Art and Design

Department of History and Theory of Art and Design

SENIOR LECTURER—

HISTORY OF ART & DESIGN

SALARY SCALE: £7,092-£8,871 p.a.

Applications are invited from persons holding appropriate qualifications in Art History to teach on the Faculty of Art and Design's BA(Hons) and Diploma courses. Preference will be given to applicants who have an extensive knowledge of, and research interests in Western European and North American Art History.

Application forms and further details of this post can be obtained from the Personnel Officer, South Glamorgan Institute of Higher Education, Cyncoed Centre, Cardiff CF2 6XU, and should be returned within fourteen days of the appearance of this advertisement.

Hull College of Higher Education
Faculty of Science, Engineering and Maritime Studies

School of Engineering

L2/SL ELECTRONICS

Temporary appointment.

Required for College year 1980-81 to teach electronics and electrical engineering principles on H.N.C. Diploma and Higher Certificate programmes as well as specific industrial short courses.

Salary scales: Lecturer II, £4,808-£7,098. Senior Lecturer £7,092 £8,871.

Application forms and further details may be obtained from:

Personnel Section, Hull College of Higher Education, Queen's Gardens, HULL.

Telephone (0482) 224121, Ext. 293.

Universities continued

ABERDEEN
THE UNIVERSITY

INSTITUTE FOR THE STUDY OF SPARSELY POPULATED AREAS

DIRECTOR

Applications are invited from Social Scientists with substantial research experience for the post of Director of the Institute for the Study of Sparsely Populated Areas.

The Institute undertakes and promotes interdisciplinary study into the problems of sparsely populated areas and has active programmes with projects concerned with the problems of such areas. There are close links with public bodies in Scotland and elsewhere.

Salary within range £10,132 to £12,564 per annum, with superannuation.

Further particulars from The Secretary, The University, Aberdeen, with whom applications (six copies) should be lodged by 31 May 1980.

Administration

Hull College of Higher Education
Faculty of Science, Engineering and Maritime Studies

ADMINISTRATIVE ASSISTANT

APS £4,080-£4,533 (Compatibility award pending)

Required to provide an effective administrative support to the Faculty. Applicants must have graduate qualifications and/or appropriate administrative experience.

Application forms may be obtained from:

The Personnel Section, Hull College of Higher Education, Queen's Gardens, Hull HU1 3DH. Telephone (0482) 224121, Ext. 202.

Miscellaneous

WHAT YOU KNOW OTHERS WANT TO LEARN

One of Britain's leading correspondence colleges is seeking freelance authors to write course material for their distance education courses.

Write to Mr. J. A. Tubman, Educational Services Division, College Hotchkiss Schools Ltd., Aldenham House, Aldenham, Elstree, Hertfordshire WD6 3AZ or telephone 0923 852841.

Administration

KINGDOM OF SAUDI ARABIA

RIYADH AL-KHARJ HOSPITAL PROGRAMME

Providing high quality health care to the Armed Forces of Saudi Arabia, the Hospital Programme includes a 319 bed Military Hospital located five miles outside of the fast growing modern city of Riyadh and a satellite Hospital at Al-Kharj, some 83 k to the south.
The mainly British staffed Hospitals have been built and equipped to the highest specifications. As well as Accident and Emergency and Out-patient facilities, specialities include medicine; surgery (including cardiac and renal transplant); obstetrics and gynaecology; paediatrics; primary health care; psychiatry and dentistry.

Administrator—

Post Graduate Medical Education

Based at the Military Hospital in Riyadh. You will be controlling and co-ordinating Departmental post graduate teaching of both Saudi Arabian and expatriate staff in addition to organising post graduate education—both within the Kingdom and abroad—for Saudi Arabian medical staff. Links are already established with the U.K. medical schools. You will also be organising international medical symposia and conferences; programmes of visits by distinguished members of the medical profession and liaising with other medical institutions both within the Kingdom and abroad, including the Royal College. The work is challenging and involving and provides an ideal opportunity for career development in this exacting field.
Given the responsibilities involved you will need to be a graduate, fully familiar with the requirements of higher educational provision and ideally experienced in post graduate medical education—either hospital or university based.
The appointment will be for one or two years initially, renewable by mutual consent.
Salary: 80,898 Saudi Riyals per annum (approximately 7.3 SR =£1).
The benefits package currently includes: tax free salary; excellent free furnished accommodation; extensive recreational facilities; free air fares; 4 weeks leave after completion of each 28 weeks service; a gratuity of one month's salary per twelve months service payable on completion of contract, generous educational allowances and free health care.

For details and an application form please write to: F. David Campbell, Manager Personnel Services, Allied Medical Group, 18 Grosvenor Gardens, London, SW1W 0DZ, quoting Ref: AMG 3, or telephone our 24 hour answering service on: 01-730 5388 (please quote reference number).
All applications will be dealt with in the strictest confidence.

AMG

Allied Medical Group

WEST GLAMORGAN County Council

WEST GLAMORGAN INSTITUTE OF HIGHER EDUCATION, SWANSEA

Head of School of Business Administration

(Head of Department, Grade V. £10,128 p.a.-£11,253 p.a.)

The Institute seeks a well-qualified person to head the School of Business Administration from 1st September, 1980. A wide range of courses is offered, including Higher Diploma in Business Studies, DMS, Post-Graduate Secretarial Studies, TUC Shop Stewards, and those for accountancy bodies. Possibilities exist to extend the B.A. (Combined Studies) degree with business oriented units.
The person to be appointed should have graduate or equivalent qualifications, with good academic and/or industrial experience. CNAA and BEC administrative experience will be an advantage as will be the ability to develop close ties with industry and commerce.
Application forms and further particulars of this post are obtainable from West Glamorgan Education Department, Princess Helen, Princess Way, Swansea. Please send a stamped, addressed foolscap envelope and quote the post reference number (i.e., C/1.9.80/THES).
The closing date for the receipt of completed application forms is THURSDAY, 1st MAY, 1980.
John Beale, Director of Education.

EDUCATION OFFICER

THE COLLEGE OF RADIOGRAPHERS

The College is a professional body concerned with recognising schools of radiography, setting syllabuses of training and examinations, as well as the organisation of seminars and conferences. We are looking for an Education Officer to co-ordinate and administer the educational services of the College.
Salary (under review) presently in the range £6,370-£7,800 plus London Weighting £596.
Further details and application forms are available from: The Secretary, The College of Radiographers, 14 Upper Wimpole Street, London, W1M 8BN. Tel. 01-935-5726.
Last date for receipt of applications: 29th April, 1980.

Southampton THE UNIVERSITY

Administrative Assistant

Applications are invited from graduates and other suitably qualified persons for appointment to a post on the Academic Registrar's Staff located in the Office of the Faculty of Medicine. The person appointed will be primarily concerned with administrative arrangements for postgraduate medical education. Salary on Administrative scale 1A £4,402 to £5,756 per annum (under review).
Further particulars of the appointment may be obtained from Mr. A. J. Small (Ext. 383), The University, Southampton SO9 5NH, to whom applications together with a curriculum vitae and giving the names of three referees should be returned by 23 April, 1980, quoting reference. 80/146/A/THES.

WALES

THE UNIVERSITY

WELSH NATIONAL SCHOOL OF MEDICINE

Applications are invited from persons with experience of equipment maintenance for the post of SENIOR MEDICAL PHYSICS MANAGER. Previous experience of University administration is not essential but will be an advantage.
Salary within the range £4,402 to £6,756 (under review) the commencing salary point will be determined upon qualifications and experience.
Further particulars (quoting Ref. No. 7/80) are available from the Registrar and Secretary, Welsh National School of Medicine, Cardiff, CF4 4XN (Tel. 0222-742731, Ext. 2204), to whom applications should be submitted by 30th April, 1980.

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Research Assistant in Business History

Required as soon as possible for official history of major insurance company. Successful candidate will have good first degree in history, economics or similar discipline. Precise field is negotiable; also research experience.

Second degree work at M.A. or Ph.D. level preferred but not essential.

Project is suitable for second degree candidate in process of completing dissertation.

Rates: S.S.R.C. levels for post graduate or post doctoral research assistants.

Application: Send *curriculum vitae* with two academic references to Clive Trebilcock, Pembroke College, Cambridge.

THE ASSOCIATED EXAMINING BOARD

For the General Certificate of Education

RESEARCH OFFICER

Applications are invited for the post of RESEARCH OFFICER in the Board's Research Unit at Aldershot. The Unit is concerned primarily with research in the field of educational measurement appropriate to the needs of the Board.

Applicants should be graduates, preferably with a Higher Degree in a field related to the measurement of educational achievement. A sound knowledge of statistical techniques that are commonly used in educational research is essential. Experience of teaching and of public examination procedures would be advantageous.

The appointment will be on a salary scale of £7,410 to £10,485 per annum, increments being paid with the Association of University Teachers' grade, points 8 to 17. The starting point on the scale will depend on qualifications and experience.

Further information, together with an application form, may be obtained from the Personnel Manager, The Associated Examining Board, Wellington House, Aldershot, Hampshire GU11 1BQ (tel. Aldershot 26851), to whom completed forms of application must be returned marked "Private and Confidential" within three weeks of the appearance of this advertisement.

CITY OF BIRMINGHAM THE POLYTECHNIC

FACULTY OF ENGINEERING AND SCIENCE

MICROPROCESSOR APPLICATIONS RESEARCH ASSISTANT

The successful candidate, who should have a degree or relevant professional qualification in Engineering or one of the Applied Sciences, will join an interdisciplinary research team. He/she will be encouraged to register for a higher degree and will be expected to undertake some teaching. The appointment will be for two years.
Salary Scale: Lecturer 1, £3,765 to £6,435.
Further details and application forms (to be returned by 2nd May, 1980) from the Personnel Officer, City of Birmingham Polytechnic, Perry Barr, Birmingham B42 2SU (telephone 021-356 4021 Extension 217).

LEICESTER THE POLYTECHNIC

SCHOOL OF MATHEMATICS, COMPUTING AND STATISTICS

RESEARCH ASSISTANT in Computer Graphics required for a two-year period in lieu of teaching duties (now incumbent on interested senior graduate).
Salary: £4,302 per annum.
Further details and application forms available from Staffing Officer, Leicester Polytechnic, P.O. Box 143, Leicester LE1 9BH. Tel. (0533) 551551, Ext. 2301.

LIVERPOOL THE UNIVERSITY

DEPARTMENT OF ELECTRICAL ENGINEERING AND ELECTRONICS

Applications are invited for the post of RESEARCH ASSISTANT to participate in a project concerning transducers and synchronisation techniques of high pressure air compressors relevant to gas blast circuit breakers.
The successful applicant is expected to participate in a programme of research, to be conducted in collaboration with the United Kingdom Electricity Industry. The candidate will have experience of electronic instrumentation or of computer work, but previous knowledge of gas discharges or high power is not essential.
The initial salary will be in the range £4,302 to £5,756.
Application forms and further information may be obtained from the Registrar, The University, P.O. Box 147, Liverpool L69 3BX, to whom completed forms should be returned quoting ref. 119/80/THES.

LONDON SE18

THAMES POLYTECHNIC

SCHOOL OF ELECTRICAL AND ELECTRONIC ENGINEERING

RESEARCH ASSISTANT

Applications are invited from honours graduates or those having a degree in physics or electronics for a research post in the Electronics Group. Candidates should be interested in either microprocessors or semiconductor applications and preferably in microprocessors for which recognition. Applicants should also have a wider field of interest in electronics and be able to assist with research and development of electronic engineering education. The successful applicants will be expected to register for a higher degree.
Salary scale: £3,435 to £5,810 inclusive.
Further particulars and application forms (to be returned by 2nd May, 1980) from the Staffing Officer, Wellington Street, London SE18 6PF, to be returned by 9th May, 1980.

BATH THE UNIVERSITY

SCHOOL OF ELECTRICAL ENGINEERING

RESEARCH OFFICER

Applications are invited for the post of RESEARCH OFFICER to work on a two year SERC radio transmission project in the School of Electrical Engineering.
Salary in the range £4,302 to £5,053 per annum (under review).
Applicants (one of whom may be a research student) should have a degree or equivalent in electronic engineering or physics, preferably with experience in radio engineering.
Further details and application forms available from the Personnel Officer, Bath University, Bath BA2 7AY, quoting reference number 80/RO/1.
Closing date: 16 May, 1980.

Overseas

STATE OF QATAR
UNIVERSITY OF QATAR
P.O. BOX 2713, Doha

Applications are invited for posts as Professors, Associate Professors/Readers, Assistant Professors/Lecturers for the following specializations, for the academic year 1980/81. Arabic is the medium of instruction except in the Department of English and other European Languages.

FACULTY OF EDUCATION
1. Primary Education. 2. Technology of Education. 3. Methods of Teaching Social Studies: Social Studies; Mathematics; Home Economics. 4. Home Economics Management; Nutrition; Textiles and Dressmaking.

FACULTY OF HUMANITIES AND SOCIAL STUDIES
1. Arabic Dept.: Journalism. 2. English Dept.: Linguistics. 3. Geography Dept.: Human Geography; Regional and Economic Planning. 4. Sociology Dept.: Sociology; Social Services. 5. History Dept.: Modern History of the Arabs.

FACULTY OF SCIENCE
1. Physics Dept.: Theoretical Physics; Nuclear Physics or Electronics; Applied Nuclear Physics (Mössbauer Spectroscopy Application). 2. Botany Dept.: Ecology; Flora and Taxonomy; Bacteriology. 3. Zoology Dept.: Invertebrate Zoology; 4. Oceanography Dept.: Physical Oceanography; Fishing Gears and Methods; Marine Hydrobiology. 5. Geology Dept.: Mineralogy and Petrology; Geophysics; Petroleum Geology. 6. Mathematics Dept.: Numerical Analysis (with background in computers); Complex Analysis. 7. Chemistry Dept.: Inorganic Chemistry; Organic Chemistry; Physical Chemistry.

FACULTY OF ENGINEERING
1. Mechanical Engineering. 2. Civil Engineering. 3. Electrical Engineering. 4. Chemical Engineering.

Applicants for these vacancies should have a Ph.D. degree in the field of specialization and a good field, or should have held a permanent position in any of the recognized universities, or research institutions.

All salaries are in accordance with the University's scale, and depend on qualifications and previous experience. Accommodation is provided along with return air tickets for the appointee, spouse and up to three children under 18 years. Medical care is free.
Applicant's curriculum vitae should include full personal details, i.e., name, address, nationality, date of birth, religion, marital status, qualifications, previous experience, list of publications and research. Copies of relevant certificates and records of previous experience should be attached. No C.V. will be returned to any applicant. Original documents must be presented by appointees later.
Applicants working in universities or research institutions should clearly their position at present.
Testimonials under cover of confidential envelopes should be marked "Teaching Staff".
Closing date—one month from date of publication. Incomplete details will not be considered.

Overseas continued

KEY ENGLISH LANGUAGE TEACHING SCHEME

Posts under the KELT Scheme are wholly financed by the British Government as part of Britain's programme of aid to developing countries. The KELT posts listed below are tenable from September, 1980.

AFRICA

CAMEROON
Primary Teacher Training Expert, Ecole Normale Instituteur Adjoint, Pitoa — 80 K 4

GHANA
Lecturer in English Methodology, University of Cape Coast — 80 K 22

SIERRA LEONE
Lecturer in English Language, Bo Teacher Training College — 80 K 1
Lecturer in English, Women Teachers College, Port Loko — 80 K 2

SOMALIA
Curriculum Development Expert, Ministry of Education, Mogadishu — 80 K 8

SUDAN
Lecturer in English as Second Language, University of Juba — 80 K 7

ZAMBIA
Senior Curriculum Development Specialist, Department of Technical Educational and Vocational Training, Luseka — 80 K 8
Lecturer in English, Nkrumah Teacher Training College, Luseke — 80 K 9
Senior Lecturer, English Teaching Methodology, University of Zambia — 80 K 10
Senior Lecturer, English Language and Linguistics, University of Zambia — 80 K 11

FAR EAST

INDONESIA
Senior Lecturer, Language Centre, Hasanuddin University, Ujung Pandang — 80 K 12

MIDDLE EAST

EGYPT
Adviser in ELT, Faculty of Education, University of Alexandria — 80 K 5

OMAN
Inspector of English, Ministry of Education, Salalah — 80 K 15
Head of English, Primary Teacher Training Institute, Qurum — 80 K 16

SYRIA
Lecturer, ESP Course and Materials Design, University of Damascus — 80 K 17

YEMEN
ELT Adviser, Ministry of Education, Sana'a — 80 K 20
Senior ELT Lecturer, Department of English, University of Sana'a — 80 K 21

LATIN AMERICA

BRAZIL
ESP Specialist, Catholic University, Sao Paulo — 80 K 18
ESP Specialist, Federal University of Santa Catarina, Florianopolis — 80 K 19

Salary: £7,779-£9,831 p.a. or £8,891-£12,273 p.a. (including 10% inducement addition).
Essential Qualifications: Degree or equivalent; teaching qualification including TEFL or educational qualification plus postgraduate qualification in TEFL or Applied Linguistics; 3-5 years' teaching experience including at least 2 years' TEFL overseas.
Benefits: Salary free of U.K. Income Tax; variable overseas allowance according to marital status and salary level; free family passages; children's education allowance and holiday visits; free furnished accommodation; outfit allowance; medical scheme; baggage allowance; paid leave. Contracts will be for 2 years, renewable with the British Council.
Enquirers, who must be U.K. citizens, should send a list of the posts they are interested in, quoting the reference number in each case. It is hoped that they will allow themselves to be considered for all posts for which they are qualified in one or more of the regional groupings. Particulars of Post, together with an application form/supplementary form, will be sent to all enquirers as soon as possible and will give details of post duties, salary and emoluments, etc. The closing date for receipt of applications is 12th May. Selection Board will be held in June. Enquiries should be addressed to:

THE BRITISH COUNCIL

Overseas Educational Appointments Dept. (KELT Section), The British Council, 65 Davies Street, London, S1Y 2AA.

UNIVERSITY OF SINGAPORE

Academic Vacancies

Applications are invited for appointment in Lectureships/Senior Lectureships in the Department of English Language and Literature.

Applicants should possess at least a Master's degree in Applied Linguistics. Preference will be given to those with a Ph.D. degree in Linguistics/Language teaching. Applicants should indicate which of the following areas they are able to teach: Nature of Language, Grammar of Modern English, Phonetics of English, Varieties of English, Language in Society, Stylistics, Language Learning and Language Acquisition. Information on other areas of specialisation should also be given.

Apart from teaching, appointees are expected to be involved in the planning of courses, construction of materials, research and other matters related to courses offered in the Department.

Annual emoluments will be in the range from S$20,900 to S$62,220 approximately, point of entry depending on the level of appointment and the candidate's qualifications and experience. These emoluments include a 13th month allowance of one month's salary in December of each year and allowances recommended by the National Wages Council for 1978 and 1979.

For staff appointed on normal contract, emplacement on the permanent establishment will be considered after two 3-year contracts. Leave and medical benefits are provided. Under the University's Academic Staff Provident Scheme, the staff member contributes at the present rate of 16½% of his salary subject to a maximum of S$495 p.m., and the University contributes 20½% of his monthly salary. (The sum standing to the staff members' credit in the Fund may be withdrawn when he leaves Singapore/Malaysia permanently.) Other benefits include: a settling-in allowance of S$1,000-S$2,000 depending on circumstances, subsidised housing at rentals ranging from S$100-S$350 p.m., passage assistance and baggage allowance for transportation of personal effects to Singapore.

Candidates should write to:
The Registrar,
University of Singapore
Kent Ridge, Singapore 0511
giving their curriculum vitae, and also the names and addresses of three referees.
(US$1=S$2.22 approx.)

Colleges and Institutes of Technology

Lothian Regional Council
NAPIER COLLEGE OF COMMERCE AND TECHNOLOGY

LECTURER A IN LAW
Salary on Scale £4,800-£8,157 (Bar) £8,733
required in the Department of Law.
Applicants should possess a degree and/or equivalent professional qualifications.

LECTURER A IN SOCIAL/INDUSTRIAL PSYCHOLOGY
Salary on Scale £4,800-£8,157 (Bar) £8,733
required in the Department of Industrial and Social Studies to teach on a range of CNAA Degree Courses and to take in a departmental research programme.
Applicants should possess an honours degree, and preferably a higher degree, and have had industrial, research or teaching experience.

LECTURERS A IN DATA PROCESSING SYSTEMS DESIGN AND/OR COMPUTER STUDIES
Salary on Scale £4,800-£8,157 (Bar) £8,733
required in the Department of Computer Studies to teach systems design, data processing and computing on courses leading to CNAA degrees, Higher Diplomas, Higher Certificates and Professional qualifications.
For systems design, experience in commerce or industry, as analyst or designer, in a team implementing computer based systems is required and for computing studies, experience in other relevant fields will be considered. Research and consultancy in appropriate areas are encouraged.
Applicants should possess an honours degree or equivalent professional qualification. Membership of the British Computer Society (or other appropriate qualifications) may be acceptable.

SENIOR LECTURER I IN POLYMER TECHNOLOGY
Salary on Scale £6,800-£7,355
required to lecture in the following areas—plastics technology, rubber technology, and assume some of the administrative duties of the Department of Chemistry.
Candidates should possess a relevant degree or graduateship of the Plastics and Rubber Institute and have had appropriate experience in the Polymer processing industries particularly in rubber technology or injection moulding.
Application forms and further particulars from:
The Administrative Officer (Personnel), Napier College of Commerce and Technology, Colinton Road, Edinburgh, EH10 5DT.

Colleges and Departments of Art

AMGUEDDFA GENEDLAETHOL CYMRU
NATIONAL MUSEUM OF WALES

ASSISTANT KEEPER—DEPARTMENT OF ART

Applications are invited for a post of Assistant Keeper in the Department of Art. A degree in the History of Art and previous experience in the Administration of an important Fine Art Collection are required. A knowledge of French, Italian and German would be advantageous.
Contributory Pension rights.
Salary scale: £7,046 rising to £11,846 (under review). (Assistant Keeper 1).
Further particulars of the post may be obtained from the Secretary, National Museum of Wales, Cathays Park, Cardiff, CF1 3NP, from whom applications should be submitted not later than Tuesday, 20 May 1980.

Classified Advertisements

To advertise in The THES phone Lorraine Williams 01-837 1234 Extn 575

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Technical Colleges

AVON COUNTY
CITY OF BATH TECHNICAL COLLEGE
APPOINTMENT OF VICE-PRINCIPAL

Applications are invited for the post of VICE-PRINCIPAL of this Group 5 college which is housed mainly in modern purpose-built premises, on an attractive site in the centre of the City of Bath. The appointment arises from the retirement at the present Vice-Principal, Mr. J. F. Williams, and it is hoped that the successful candidate will be in his appointment by 1st January, 1981.
The salary at present is £11,754 per annum (subject to review).
Further particulars and application form, (B.A.S. please) which should be returned by 7th May, 1980, are available from the Principal, City of Bath Technical College, Avon Street, Bath, BA1 1UP.

Colleges and Departments of Art continued

Duncan of Jordanstone College of Art
Dundee

Vice-Principal

Applications are invited for a new post of Vice-Principal of the College.

Duncan of Jordanstone College of Art is one of the four Central (Art) Institutions in Scotland.

Honours Degree, Degree and Diploma Courses offered by the College include:

(1) Architecture
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Ceramics
Product Design
Interior Design
(3) Drawing and Painting
(4) Home Economics, Institutional Management and Catering and Hotel Keeping
(5) Sculpture
(6) Town and Regional Planning

Courses in Printing are also offered at City and Guilds level.

Forms of application and particulars of the duties of the post may be obtained on application to the Secretary, Duncan of Jordanstone College of Art, 13 Perth Road, Dundee (Tel. No. 0382 23261) to whom completed applications should be returned not later than Monday 12th May 1980.

Colleges of Further Education

Garnett College
Downshire House, Roehampton Lane,
London SW15 4HR. Tel: 01-789 6533

Vice-Principal

Applications are invited for the post of Vice-Principal of Garnett College of Education (Technical).

The College prepares mature students for teaching in further and higher education and also provides advanced diploma and degree courses.

The Governors are seeking a person with high academic qualifications and experience in teacher training and further education. Experience in industry or commerce would be an added advantage.

The College is in Burnham Group 5 and the salary for this post is £11,451 (subject to formal approval) plus £609 London Allowance.

Further information and application forms, returnable by 9th May, are available from the Principal at the above address. Please quote ref. THES.

ilea

LONDON
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Solomon Street, Battersea Bridge Road, London SW11 5PW
HEAD OF DEPARTMENT
TECHNICIAN STUDIES

Required due to the retirement, this session, of the Senior Technician Master of Construction Studies of Department status.

The Department offers technician courses for the building trades at Craftsman, Technician and Advanced Technician levels. It provides also a range of other courses for the construction industry.

Applicants should be practical craftsmen with relevant academic qualifications and recent experience in certain craft trades. Academic knowledge and the ability to assist in developing departmental and personal academic studies are essential. Applicants should be willing to contribute and participate with other senior staff in the management of the Department and whose duties will include deputising for the Head of Department in his absence.

Application forms and further details from the Principal at the above address (quoting ref. A) or Vauxhall College of Building and Further Education, Solomon Street, London SW11 5PW (enclosing a stamped addressed envelope).

Closing date: May 12th, 1980.

Colleges of Education

OXFORD
WESTMINSTER COLLEGE
North Hinksey, Oxford
LECTURER IN FRENCH

Applications are invited for this post, tenable from September 1980. Candidates should have good qualifications in French and, ideally, some experience teaching French studies and should be able to contribute to Secondary School level. A second teaching language would be an advantage.

Further details may be obtained from the Principal's Secretary, Westminster College, North Hinksey, Oxford, to whom completed forms should be sent by May 9th.

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Union view

Week in the life of a vice president

SUNDAY: After lunch, a pleasant drive across the Chilterns to Oxford to attend the annual conference of the secondary heads' association. The translucent spring sunshine gave way to cloud and then rain as I approached Oxford, so that the weather, at least, provided the appropriate atmosphere for an assembly of educationalists of the present time. John Sayer opened the conference with a restrained, perceptive address setting out the frustrations which face every section of the teaching profession. Particularly welcome was his call for the reconstitution of the advisory Committee for the Supply and Education of Teachers. It would have so many urgent tasks straight away—not least to assemble the relevant data to guide policies of recruitment, in-service training and the nature of teacher training in the 1980s.

MONDAY: Two contrasting speeches stood out from today's full programme. A Minister from the Department spoke with some optimism on the education of the 16 to 19 age group. He was, of course, very careful to delegate to the local authorities any decisions which might involve resources, but he soon got into difficulties when questions were invited. After what seemed suspiciously like floundering on the assisted places scheme, serious students and shared provision, he fell back on the standard lecture on how the economic situation justified all decisions.

TUESDAY: An early breakfast and then a drive back to London to attend a meeting of the Teacher Education Advisory Committee for London and the Home Counties. Representatives of universities, local colleges and professional associations drawn from the South-East examined major problems facing teacher training within the region. Paradoxically, two of the most urgent problems seemed to be overprovision and underprovision, since some institutions are being deluged with applicants in certain limited subjects but are faced with famine in others. All teacher employment figures, on the other hand, show that supply is failing to meet clear and essential demands. Possible solutions were reviewed, but the major obstacle proved to be the "black hole" in Elizabeth House into which proposals, ideas, policy statements disappear without trace.

natfhe

WEDNESDAY: After three days away from home, today seems as though it will be claimed by Crombie. Soon after breakfast the first telephone call from a member seeking advice on safeguarding heralds a full day of individual casework problems. After a brief conversation with a branch secretary from a closing college I set out on a series of visits, first to Hamilton House to consult with officials and then on to two London colleges to talk with individual members about their own redundancy and redeployment queries. There is no doubt that our former ATCDE membership has been well served by Natfhe officials and by the stand which the association has taken since the beginning of the "run-down" in teacher education.

THURSDAY: Meet with Natfhe's education secretary at Hamilton House to review our presentation of evidence to the Parliamentary Select Committee on the financing of Higher Education. The two main questions we raised with the Select Committee were those relating to the national body and to overseas students. On the first we were concerned to indicate the confusion and threatened mayhem to HE provision in the public sector which has resulted from the hurried, arbitrary and contradictory arrangements made this year for the "capping of the pool". The drastic proposals at NELP, which have provoked such an explosion of anger throughout our polytechnic membership, are just one instance of what is happening in higher education. Our delegation to the Select Committee put forward the case for the urgent establishment of a national body. The need for co-operative planning for higher education is underlined daily as ministers and officials make threats about rationalization and the balance of curricular provision, arousing fears and inviting negative responses. On the issue of overseas students the dogmatism and blinkered financial vision of the Government beggar description.

FRIDAY/SATURDAY: Two long days of executive committee and council meetings. Undoubtedly the major topic in all members' minds is Clegg. The contradictions and superficiality of the job evaluation exercise have naturally aroused anger everywhere. It is accepted that as a first step towards a just settlement the employers must recognise the essential contribution made to higher education by polytechnics and colleges in the public sector. At the same time the executive agreed two important reports on professional issues. Firstly the association's initial response to Finniston which had already been the subject of lengthy debate at an earlier executive committee. Today agreement was reached. The second document to be considered was Natfhe's contribution to the debate on Education and Development which is the theme of this year's conference of the World Confederation of Professional Teachers' Organizations. The choice of this theme is an indication that teachers at the international level are fully aware of the implications of the North-South divide which had been spelt out by the Brandt Commission.

Jim Richardson

The author is Head of Department at Polytechnic of Central London and vice president of the National Association of Teachers in Further and Higher Education.

Science in America

Searching for truth under the ice cap

Clive Cookson

As concern grows about the likely effects of human activities on the climate, scientists are paying more attention to the factors that have caused major climate changes in the past. Insight into natural variations should help them predict the climatic impact of man and perhaps suggest ways to control it.

The history of the earth's climate over the past 100,000 years or so is now fairly well from the geological evidence. But the cause of the major changes, of which the most spectacular were the sequences of ice ages, remains a subject of lively scientific controversy.

A theory first proposed by Milutin Milankovitch in the 1920s is the most popular scientific explanation of the ice ages. Cycles of changes in the earth's orbit around the sun and in the tilt of its axis periodically reduce the amount of solar energy reaching the high latitudes in the summer, according to the Milankovitch theory. Then the winter snows do not melt and an ice cap builds up. Because snow and ice reflect solar radiation, the growing ice cap will further reduce the amount of energy absorbed by the sun—and an ice age gets under way.

Recently, however, a number of American scientists have expressed doubt about the ability of the Milankovitch theory to explain fully the timing and intensity of the major ice ages. Changes in the earth's orbit may indeed make the conditions more favourable for an ice age at certain times, they say, but something else is needed to initiate large-scale glaciation.

One possibility is simply that internal variations within the sun periodically reduce the amount of solar radiation reaching the earth. A reduction of only a few per cent in the solar constant (which measures the output of solar energy) would produce catastrophic cooling on the earth.

Unfortunately there is absolutely no evidence one way or the other about the long-term stability of the solar constant. However, there is no theoretical reason why it should not change periodically; even the short-term ordinance is doubtful. Two well-known studies have concluded that the sun's energy output has varied by at least 1 or 2 per cent within the last century, but their findings are doubted by climatologists, whose models indicate that such a large change would have caused far more variation in the weather than has actually occurred.

Much more accurate data about the short-term behaviour of the sun should become available soon. The "new" solar maximum" satellite put into orbit in February has an instrument designed to measure solar radiation extremely accurately, and a better understanding of solar variations and their effect on the earth's climate will be one of the priority aims in the national climate programme, a five-year research plan soon to be adopted by the United States Government.

In addition to the external agents of climatic change—variations in the earth's orbit or in the solar constant—there are several factors within the earth and its atmosphere that could be responsible. The two that are currently most popular are volcanic dust and sudden surges of ice from Antarctica into the surrounding oceans.

Theoretical calculations indicate that the amount of dust thrown into the atmosphere by a volcano is sufficient to affect the climate, by reflecting some of the radiation much the American journal *Science* published a fascinating paper by Reid Bryson and Brian Goodman of the University of Wisconsin, relating variations in volcanic activity to advances and retreats of the continental ice sheets over the past 40,000 years. Although the timing of prehistoric eruptions is difficult, high levels of activity do seem to be associated with periods of increased glaciation.

As an explanation for major ice ages, however, volcanic dust is less fashionable at the moment than Antarctic ice surges. Several respected climatologists believe that every few thousand years a substantial part of the Antarctic ice sheet slips into the sea, forming a vast ice shelf around the continent. Ice white surface reflects back enough solar energy to trigger off an ice age.

Scientists at the Australian National University recently produced convincing geological evidence from the study of ancient coral reefs in New Guinea that a surge occurred about 120,000 years ago, temporarily raising the sea level by 25ft and causing a rapid cooling of the ocean.

John Hollin of the University of Colorado, an American pioneer of the surge theory, believes geological evidence from several sites around the world indicates that an even bigger surge—raising sea level by as much as 60 feet—took place 95,000 years ago when millions of cubic miles of ice slipped off the East Antarctic ice cap, but events could coincide with the onset of major ice ages.

Although there is no evidence that the Antarctic ice shelf is ready to slip again in the near future, it is conceivable that the famous "greenhouse effect"—the warming of the atmosphere caused by the build up of carbon dioxide as a result of the increased burning of fossil fuels—could produce the right conditions for a surge. In the 21st century, if so, the greenhouse could quickly turn into an icehouse.

Don's diary

Sunday

My god-daughter arrives at King's (plus trumpet) at 9.15 for an interview and entrance exam in the music faculty. We have a tour of the college and coffee in the student snack-bar; Margaret looks very young compared to the jean-clad students. I forego the non-theological AGM lecture, a Monday morning pleasure.

Roger (my husband) comes for an early lunch in the deserted SCR. We sit in warm sunshine overlooking the river and discuss the planning appeal for which he has just been in conference. He sets off to Oxford Polytechnic for the week. Back in my lab, Margaret and newly acquired (male) friend appear and so we go for a walk and they chat easily about their music.

Dental tutorials in the afternoon; two rather different groups. The first are enthusiastic and we play "Cardiovascular Rummy". A colleague drops in and joins the game; we over-run the time and the next group of students arrive. They feel excluded and assert their identity by deciding not to play when the opportunity arises later.

An evening at the youth office for policy and resources committee. We recommend registration of youth groups with the Islington area youth committee, decide about allocation of equipment grants and deployment of full-time youth workers.

Monday

Last year the AYC divided the borough into seven areas to try to make sure members of the AYC are better informed about the needs of young people in their local "patch". As usual, some AYC members have got together in their areas with local workers in relevant agencies such as social services, recreation, intermediate treatment, juvenile bureau, community development, and they all meet regularly to exchange ideas about particular areas of concern, e.g. in local crises and about development work. However, some of the seven areas have not "jelled" in this way and we discuss what should be done.

Tuesday

At 8.50 to get my experiment going so that I can attend an examiners' meeting at 2. Thwarted by inability to get into the animal house till 8.45, but despite the rush, the experiment goes well. Med Soc President comes in to discuss his speech at the forthcoming dining dell, and a graduate student brings in some grant application forms; I agree to write a reference for her. 2.45 pm. We've set the dental papers for June and September—an efficient operation requiring now only the external examiner's approval. I dash off to the dress rehearsal of the medical faculty musical *Brainwave*.

It turns out to be the technical rehearsal still and I'm not due to appear till late in the evening. Written and directed by a second-year medic, it is amazingly good. Songs, dance routines and a plot—but who did he get it in the 1950s? The students look after me and make sure I go on at the right moment and have my gear organized ("Dr France"—"Dr Who?"—"No! Not Dr Who; Dr France ...") They even nip out to Woolworths to get me a bag of jellybabies.

Wednesday

My annual day coaching at Chelsea College. I leave my bike in King's and bus over with my heavy Vibram. I'm pleased the pasted baker still survives the onslaught of boutiques in the King's Road. The third year students are interested but rather subdued in the lecture; they seem to recover after coffee, the practical session is stimulating and my equipment all seems to work. I go off to catch up on the gossip from Mrs Dibolt in the basic medical sciences secretary, while I'm in her room the heads of the various departments drop in to chat. We swop notes about the Flowers report on medical education in London—depressing topic for those who believe in the benefits of university education in a multi-faculty institution for medical and dental students, quite apart from effects on us of closure of our faculty. Sue, the lab technician agrees to take my apparatus back to King's early tomorrow morning and I am duly grateful not to have to carry the Vibram to the local wine bar—where I meet with some of my UTMU (University Teaching Medicine Unit) year of 1978. I am a non-medical faculty tutor on the UTMU September course for lecturers, and meet groups each to carry on meeting regularly for years after their course, partly to discuss teaching techniques, methods, problems and ideas and partly as a form of "mutual support group". We go back to the first night: Dr Who is greeted with surprised laughter and a burst of applause. I leave my cool and smile with pleasure.

Thursday

Another early start, but I'm tired this morning after late night essay marking for Friday's tutorials; the experiment is less good. However, I have practical help today, so Joanna and I discuss her medical school applications and by lunchtime things are going well in the lab. Two tutorial students come out to lunch in Covent Garden, we enjoy food and acrimony and as tolerating discussion results; they are remarkably sanguine about job prospects for Physiology graduates. Back around 3 pm, I get my CV up to date for a clinical project grant application with a colleague in Cork—hopefully I shall be able to combine business with a weekend visit in the summer. We met at a symposium in Venice last June; what a delectable city for a conference!

Friday

First-year medical tutorials. Both groups arrive at 10 and those whose turn it is to come at 11.30 sit firmly in the chairs looking somewhat self-righteous. I keep out of the ensuing discussion, but am privately surprised at the ready submission of the displaced group. When the tough guys are done easy planning in room, I go and get some coffee and open the post. Feel very relaxed. This is what the university is for: self-motivation, learning self-discipline, group cooperation, etc. This weekend I must finish the draft of a UTMU colleague's book *Learning in Groups*—it seems good so far: divided nicely between discussion of tutor techniques and styles, and theoretical relation to aspects of group dynamics. Spend the afternoon in the EM unit taking micrographs of a session from premature deliveries in Cork; there seems to be a clear difference from controls examined last month, which is encouraging for our project grant application.

A quick beer with a colleague before the last night of *Brainwave*. I offer an ice-bucket with bottles of bubbly at the final curtain and the author pops a cork into the vociferous audience accompanied by a drum-roll; the band do another encore of the last number. Later I pedal home, an anticlimax. Roger returned from Oxford, is entertaining friends who used to live with us and also our favourite doaconess, Linda Mary Evans (ex King's Theology) and a friend of hers who will stay the night. Around midnight Roger goes to prepare a lecture for Bedford school Sixth form for tomorrow and Linda Mary and I talk for a long time.

Saturday

A damp, lonely day, rescued eventually by my second-year medic tutees who come to dinner. We discuss art and music, and I discover that one of them is invited to give a recital of classical Bengali songs at Sussex University tomorrow. Problems of the course crop in at last but we end up deciding how to solve it all and, pleased with ourselves, say goodbye.

Venetia France

The author is a lecturer in physiology at King's College London.

LETTERS TO THE EDITOR

Laurie Taylor

Dissenters who shore up the Oxford English course

"Dear Professor Lopping,
I am pleased to write in support of Ms Cumbert's recent application".

Why on earth did academic references sound more and more as though they had been written by bank managers. I mean, take this poor schmuck who was writing "in support" of Ms Cumbert. You could tell from that vague opening phrase that this was a copy of a standard reference. Nothing specific about "graduate studies in the department of linguistics", just "recent application". He could imagine the scene. "Another one for Alison Cumbert, Barbara. Same as usual, I think, except cut out the last line about "friendly and sympathetic": that was rather more suitable for her social work application".

Perhaps it was all to do with unemployment. If hardly anyone was going to get a graduate place or a job, then why not write everybody a cheerily innocuous reference.

"Although I have not personally supervised Ms Cumbert during her time at Leicester".

Come clean, Charlie. What you mean is that you've never clapped eyes on the poor hopeful. Went to look at the photographs when the first request came through. Couldn't even recognise her, could you? "Alison Cumbert, Barbara: is she the one with the razor cut red hair and rouged cheekbones?" No? So difficult to tell with these old photographs".

He could remember, distinctly remember, when graduate references had some style about them, some feel for language. None of this "satisfactory" + "working well" + "high hopes" = "confident + well-motivated". Mere husks of words with not a fibre of meaning left within them.

So many examples. For a start. What about that 1957 reference for Henry Turnbull from Leon Kossoff, of Reading? "This man has expressed a wish to pursue graduate work in your part of the country. If this geographical aspiration is based on the density of remitted evidence which he is attracting in this direction, then you would be advised to choose a way with your interview invitation?" Delightful.

And now what had we, Mrs Cumbert? "Confidently expected to obtain a good honours degree, second degree". She is popular with both staff and fellow students and seems well suited for the position you describe".

Or that, my favourite, "we do was I ship and load it to the gunwales with words and phrases which had died in the service of references, with "confidently expected", "well suited", "working well", "making progress", "highly satisfactory", "a sense of security", "popular" and "seems" all then loaded the lot out to sea and bury them. Slight danger of creating a whole slick of courtesy people struggling up the beach at Brighton saying "Yuck, I feel a bit of a fetishistic fortuitous in my lungs and I popular with both staff and students" all that beach bean. Worth it though.

Oh yes, it did just come back to him, the one he had liked best of all was Dr Gentwelf's delicious opinion about that bungling idiot Harrington who was not just about to embark on the eleventh year of his doctoral studies. "I see that this candidate is described on one of his tutors' reports as, in fact, a neurotic. I assume this to be a snippet reference to his uneven performance in seminars. However, in the instance of tutorials I have also from time to time felt, that this quality will be found to take the preferable attribute into account".

They didn't write them like that nowadays.

Single A level entry

Sir,—While sharing the concern reported by Ms Barry (*THES*, March 28) at the plight of girls with one A level who formerly found places on Certificate of Education courses, we feel that Ann Bone's solution, a one-A level entry DipHE is not the answer.

The DipHE has established itself as a course guaranteeing transfer to honours degrees without loss of time. This feature of the diploma has proved highly successful in opening access to higher education and degree duties to mature students in particular. The 1978 intake to free-standing diplomas contained 62 per cent of students over 21 without formal A level entry qualifications. This pattern has been repeated in the 1979 intake.

It would be undesirable to threaten the academic status of the DipHE, which is much valued by mature students, by defining the DipHE as a course of study in the liberal arts for young people with a single A level. This would not result in the sort of national recognition which the DipHE is gradually establishing for itself.

However, the diploma, by offering a two-year course of study to students aged under 21, has shown that these can succeed in degree level courses. This finding will come as no surprise to those familiar with research into the doubtful predictive validity of A levels. We would, therefore, suggest that there are solutions to the problem identified by Ann Bone which would not undermine the status of the DipHE. These might include:

● Foundation courses in the polytechnic sector. In the HE sector, giving access to the sort of existing courses or DipHE courses or other vocational courses.

● foundation courses at first year degree level within Higher Education institutions designed to facilitate transfer without loss of time to degree DipHE or vocational diploma courses as appropriate.

● the development of a range of less narrowly vocational courses of comparable status to those offered by BEC and TEC.

● the acceptance of a quota of students with one A level into existing degree as well as DipHE courses.

This final solution recommends itself as being the cheapest, simplest and most immediately feasible.

Yours faithfully,
GERWYN REY, chairman (Surrey),
JOHN DAVIDSON, secretary (Leicester Polytechnic)
Association of Colleges Humanities Dip. HE programmes.

Merrison and research

Sir,—Is the Merrison committee's review of research councils' support for university research (*THES*, April 4) to be honest, or will it be a cover for continuing shoddy treatment of research staff?

While the Science Research Council is participating in the review, it has only recently decided on a fare-paying restriction to its own research support, namely enforcement of a three-year limit on individuals holding its research assistant posts. These make up the vast majority of SRC-supported university posts—more than 3,000 compared with 100 advanced fellowships and tens of senior fellowships. Though other research councils tend to dislike necessary short-term contracts, none has tried to impose such a low and rigid limit.

For it is clear that experienced researchers are invaluable and irreplaceable for certain projects. Three-year posts for such research projects cannot be run by a succession of three-year contract researchers. Special dispensations for project managers are currently being argued; that authorisation has not been extended to experienced and committed instrument designers and analysts. Already some space "project managers" are currently run down. Expensive equipment would be housed and expensively accumulated data would remain in store. Other engineering and physical research disciplines must be similarly threatened.

The Merrison working party was set up in response to pressure from researchers, particularly in the medical field, for a measure of security and career prospects—pressure which naturally evoked a positive response from MPs and governments. Its interim report to say has yet been found to include any representative of researchers—the exclusion of trades union representation must make the seven-man "working party" (all-male) difficult among modern committees of inquiry.

The SRC's new limit is removing all security and forcing out long-term researchers, is not only callous towards individuals and damaging to research projects but also flouts or at least prejudges the basic aim of the inquiry—to consider the most effective use of existing and likely (research) resources. In agreeing to participate, the Science Research Council should surely, in decency and consistency, suspend imposition of its drastic three-year limit.

Yours faithfully,
Dr M. K. WALLIS,
Dept. Applied Maths and Astronomy,
University College,
Cardiff.

Open University genetics course

Sir,—Professor Edwards displays appalling ignorance of the Open University system in "Review: Genetics, S299 Course of the Open University".

In criticizing the apparent omissions from the textual material he ignores the "recommended prerequisites" for S299. He ignores supplementary material, experimental exercises, radio and television. He is unaware that in each region of the Open University there is a detailed tutorial programme within which experts in genetics, who have the "direct experience" of which Professor Edwards complains, diversify, elucidate and enrich the students.

Professor Edwards is unaware that there is a student handbook that advises on choice of courses. The science faculty issues its own advice on choice of courses. The Science Faculty handbook for Tutor Counsellors exists to assist them at a series of individual meetings to advise students on their choice of course and their suitability to embark upon a specific course.

As a mere biochemist, I am appalled by the distribution disclosed by Professor Edwards. It states that the presence of haemoglobin means "adult mammals". Presumably patient babies are not genotypic to man because it is not present at birth. Further he claims that haemoglobinism can manifest itself in singular effect. It follows that there is no form of albinism that exists in families. An astonishing notion!

I look forward to Professor Edwards's colleagues' points of record straight in the next medical periodics. If the level is his comprehension within this article is as low as his knowledge of the Open University system, students would do well to study it completely if they are to correctly heed the science of genetics.

Yours faithfully,
VIC FINLAYSON,
Staff tutor in science,
The Open University,
(South West Region).

Scientific biography

Sir,—I welcome the publication of the first volume of the *Dictionary of Scientific Biography* (reviewed in *THES*, March 28). I am pleased to have been one of the contributors and I congratulate the editor, Professor Charles Gillispie.

I cannot, however, follow his unchallenged your statement that it is one of "the first monuments of academic historians of science".

The subject was first taught at University College London in 1920, when Professor Gillispie's one year old, and philosophy of science, as it now called itself, formally established in 1934 under the direction of Professor Edgar Wolf (1876-1948). For the chief subject he enlisted the chief scholar, Charles Singer (1876-1960) and in 1935 he had been joined by Dorothy Armitage (1902-1978) and Rupert McKie (1896-1967). These, and others elsewhere in Europe and the United States, were belonged to a generation for whom the subject was an essential discipline between the arts.

Yours faithfully,
Dr W. A. SMEATON,
Reader in History and Philosophy of Science,
University College London.

Austerity and NELP

Sir,—As the coordinator of a project to help if it can prevent that North East London Polytechnic is doing its part to help the jobless (Letters, March 28), I am at a loss to understand the attitude of Mr Tomlinson, chairman of the Education Committee, that we should do well to study the lessons of the Open University, which is as low as his knowledge of the Open University system, students would do well to study it completely if they are to correctly heed the science of genetics.

Yours faithfully,
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Dr W. A. SMEATON,
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Chairmen and directors

Sir,—The views of the rightly chairmen of polytechnic governing bodies and directors of polytechnics (*THES*, April 4) gave undue prominence to the comments of some directors and directly underplayed the importance of the views of the chairmen.

The remarkable feature of the consultative meeting was the almost unanimous consensus expressed by the chairmen for the views and proposals outlined in a paper circulated prior to the meeting by Dr K. J. Cleaton, chairman of Bristol Polytechnic. Chairmen unable to attend the meeting wrote in support.

A small group of chairmen had come together before the meeting to discuss their concerns. These chairmen included those who long service as local authority councillors, as industrialists and who had served polytechnics nominated by local authorities in membership of both ACC and AMA including one from an ILEA-sponsored polytechnic.

Following an informal meeting with the Secretary of State for Education and Science, the group decided to share their concerns with all other chairmen which resulted in the consensus that in order to preserve and develop the distinctiveness of the polytechnic form of higher education, changes were necessary including changes for corporate status and for national planning, control and financing.

That the views of their chairmen were shared by directors is not surprising; that the concerns of both chairmen and directors are not appreciated by the spokesmen of the local authority associations indicates that the latter are not aware of the problems inherent in managing large complex institutions of higher education providing a national, regional and local service. It is the hope of both chairmen and directors of the polytechnics that those who speak for the local authorities will engage in discussions with them with a view to a more rational and creative system for the planning and control of the polytechnics.

Yours sincerely,
DAVID BETHELL,
Chairman, Committee of Directors of Polytechnics.

Letters for publication should be sent to reach us on Tuesday morning at the latest. They should be as short as possible, and the editor reserves the right to cut the letter and edit them as necessary.

TIMES PAST THE TIMES
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Prague and Malta

Two events in the last week have raised once again and in particularly stark forms the old question of the extent to which the university is a universal institution the form and spirit of which are not determined by national environments. The first was the brief arrest of Dr Anthony Kenny, the Master of Balliol, in Czechoslovakia after he gave a lecture on Aristotle in the flat of Dr Julius Tomin who has been banned from teaching at the University of Prague. The second was the passing by the Parliament of Malta of the Act which finally abolished the Royal University of Malta and concentrated all higher education on the island in the new university.

The bracketing of these two events is not intended to suggest in any way that they are the same. Dr Kenny was the victim of a regime which one suspects embodies the Czech national will very imperfectly if at all and which maintains itself in power by imposing a rigid ideology backed by the repression of a police state. The changes in higher education in Malta, on the other hand, were decided upon by an entirely legitimate government and passed by a democratically elected parliament.

Yet both actions are seen as in conflict with the traditional values of the university—values which, it must be added, have been largely developed and interpreted in the societies of western Europe and north America. Dr Kenny last weekend was trying to uphold the values of free inquiry and free discussion in a country where such values are habitually overridden by the demands of ideological orthodoxy. In the rigid and authoritarian climate of eastern Europe today this was a radical act.

The action of Mr Mintoff's government, though, is criticized for similar reasons. It is argued that a traditional liberal university has been destroyed and a new university, which is much more subject to the direction of the Government and to the demands of the economy, has been created in its place. Academic freedom is again the issue although it is much less clear cut. But in this case perhaps the insistence that liberal values must be upheld is a conservative rather than a radical act.

So the issues raised by Dr Kenny's arrest and expulsion and by Mr Mintoff's new university, although very important, are far from simple. Before any intellectually and morally sound judgment can be made on these events several stages have to be gone through. First, political expediency has to be separated from academic principle. If liberal values are to be upheld, then all societies which do not respect these values deserve to be condemned—Saudi Arabia or China, as well as Czechoslovakia and the Soviet Union.

Second, the existence of repression in eastern Europe should not blind us to the glacier-like liberalization that has *been proceeding* there (admittedly with setbacks) since the death of Stalin. After all, Dr Kenny was allowed in to lecture, though it was known that he intended to speak at one of Dr Tomin's seminars. These seminars, like the "Flying University" in Poland, or even the home-study classes held by Jews determined to leave the Soviet Union, have maintained a precarious life, unloved by the authorities but unbanned.

Third, any automatic assumption of superiority has to be kept in check. After all, foreign academics who hold controversial views have not always been well received in Britain, whether Professor Huntington by Sussex students or Rudi Dutschke by the Home Office. Nor (perhaps was) the position of the private University College of Buckingham much happier than that of the former Royal University of Malta. An important distinction must also be made between what the State allows and what the Government is prepared to pay for—a distinction that can still be made in the west, although less easily than a generation ago, but one that becomes decisive when dealing with Communist and Third World countries, with large public sectors, or centrally planned economies.

The real discussion should centre on the extent to which the liberal values of the university are shared in Europe and North America in the past 100 years can, or should be, exported. Or are these values so ethnocentric and culture-bound that they must be regarded as special characteristics of higher education in rich and democratic countries, and not of higher education generally?

To assume the former is to succumb to arrogance: to assume the latter despair. In the first case there is a clear need to distinguish between the particular organizational forms through which liberal values have traditionally been expressed (which may well be ethnocentric) and the values themselves (which presumably are of more general application). There is also a need to recognize that as higher education grows in scope and numbers, as it should, a conflict may be generated between traditional liberal values and newer popular ones. This does not mean that Britain should sprout workers' universities à la Mintoff, simply that a higher education system no longer so dominated by young privileged academically-orientated males may have different contours. Perhaps the experiences of the Open University has offered a faint premonition of the kind of conflicts that might emerge more strongly.

In the second case, nothing could be more despairing than to accept the division of the international university community into a rich and free "north" and a poor and unfree "south". The only way to avoid this deepening division is for western universities to accept that the precise models developed in Europe and North America are often unacceptable—because of the colonial past—and inappropriate—because of the pressing need to develop understanding relevant to many nations in Asia, Africa and Latin America. Indeed it may be necessary to go further, and to incorporate into the traditional idea of the university a higher priority for national development and social equality. To say this is not for a moment to condone the arrest of Dr Kenny (although it may make it more understandable); but it is to plead for greater sympathy for the general aims of Mr Mintoff, if not for their detailed application.

The state of sociology

Last week's conference of the British Sociological Association at Lancaster took as its main theme the state of sociology as a discipline. Has emerged was a paradox. Looking back over the past 30 years, the university of sociology as other social sciences disciplines (and its beneficial influence on the curriculum and even the natural sciences) was amply confirmed. But at the same time sociology in 1980 gives every appearance of a discipline under siege. Perhaps the Lancaster conference helped to restore a balance. Recently, far too much attention has been paid to the crisis of sociology and far too little to its achievement. It is time that sociology mopped sociologising for itself so much.

It may also be time for those outside the discipline to adopt a less negative attitude as well. Certainly the current disfavour of the Social Science Research Council of present seems to be to favour the "hard" social sciences like economics and social administration at the expense of the supposedly "soft" subjects like sociology. This is reasonable if it is merely an attempt to achieve a balance between the more practical and the more theoretical parts of the social sciences. There is perhaps a case for arguing that the latter were over-favoured during the 1960s. This bias against sociology may also be a political necessity if the SSRC is not to see its funds drain away during conservative times like the present.

But the pendulum should not be allowed to swing too far. Perhaps it was inevitable that all the disparated research centres should be in a hard, quantitative, social sciences rather than the soft, qualitative ones. But that fact is bound to act as a powerful and negative signal to sociologists. To a great extent the "disciplines" signal ignored in sociology for like these other disciplines. It can even be argued that progress in other social sciences during the 1970s has been built on progress made in sociology during the 1960s. To say all this is not to try to canonize sociology from the many sins of which it has been accused; merely to argue that such a central discipline for the expansion of human understanding should not be allowed to fall too much out of fashion.

Will Clegg be clawed back?

The Clegg award is a good one for teachers in the non-university sector. Salary increases of between 17 and 26 per cent (on top of those recently agreed a year ago) are not inconsiderable in the circumstances. No looking leadership of NATFHE will be seriously criticized by its radical elements at its Scarborough conference next month for pushing hard for a generous settlement. Nor, given the better than was expected offer, will the rank and file be tempted to take the alternative attribute into account.

They might write them like that nowadays.

Yet the Clegg award is not the end of the story. It is clear that the non-university teacher's salary should be increased by 17 per cent, or £750, and that maximum for a group 12 principal teachers by 26 per cent, or £1,265. This is a significant and, of the principle to which that itself should be given—will not be universally accepted particularly as it appears to depend on the "market" operating in a manner not in accordance with the natural salary order.

The same principle applies about whether a single salary scale for lecturers in the non-university higher education is a sound idea, the collection being that the disparate and advanced further education scales might be better. In fact the proliferation of overlapping and inconsistent salary scales for teachers in the non-university sector is a matter of long standing, desirable enough, and serious chaos.

The second qualification is more immediate worry. With a regime of cash limits that grows harsher by the day (and has its own little refinement in advanced further education with "capping the pool"), will the Government simply claw back much of the cost of the Clegg award by, for example, compensatory increases in public expenditure? The hope must be that it will keep its promise and not the fear that it will be, that even if it does it will be hard to do. But this claw-back is to some extent inherent in a situation where the government is attempting to impose a cash limit on a particular sector of public expenditure which is, in effect, being asked to make a special contribution to the overall cash limit.

Time to change the terms of partnership

Stephen Muller

Just two years ago, I expressed concern in this space about the decline of basic research in American universities. My main point then was that the major research universities had been quietly subsidizing research by diverting funds they were receiving as a consequence of three decades of increasing student enrolments, and that this practice would have to end now that student enrolments had begun to decline. In the interval this has proven to be true, and an even more ominous set of facts poses an even greater threat to the future of basic research in American universities. This set of facts has to do with the huge scale of effort and exposure which basic research now involves.

During the past three or four decades, basic research has become wholly dependent upon sophisticated technology which has vastly enlarged its scope but even more vastly increased its costs. While the human mind obviously still dominates the research process, less and less basic research is carried on by single individuals, and more and more is necessarily done by ever larger teams of persons working together.

Complicated calculations are no longer done in someone's head but by computers, which also store the data, once kept in notebooks or on scraps of paper. Most of physics now involves huge arrays of instrumentation that demand platoons of talent for operation and maintenance. Many of these instruments are so large that they can only be constructed once or twice, then to be used in common by national as well as international teams.

It is not understood widely enough that an unbalanced explosion of instrumentation has been involving the other physical and nonartificial sciences as well. Chemistry and biology still have their traditional beakers and smells, but they also depend on electron microscopes and nuclear magnetic resonance spectrometers. Biological and health research is equally dependent on lasers, nuclear accelerators and electronic scanners.

Increasingly advanced work in those fields requires interdisciplinary talent, and a huge fraction of time and effort must be devoted to the maintenance and adaptation of complicated and expensive instruments so that research may be further advanced. This situation is most acute in physics and natural sciences, but the social sciences increasingly have also become dependent on computers and microprocessors, and even the humanities have been affected.

What all this means is that the support of basic research necessarily now involves billions of dollars for which the federal government is virtually the sole source. It is only natural that such huge annual expenditures should be questioned, and evaluated in the light of a host of other personal, national priorities. But what is clear is that the option of doing basic research on the cheap no longer exists.

From the university point of view the problem is more stark. With the possible exception of the Department of Defense, basic research does not generate any significant scale with its own resources.

It was fair enough years ago for the government to assume that universities wanted to make commitments of their own to this basic research, in large part because basic research properly continues to be regarded as an inextricable part of the university's teaching mission. And, in fact, training of young scientists remains substantially dependent upon their involvement in basic research. Basic research equally depends for its execution on these same young scientists, even if they cut their teeth in the laboratory as junior members of a large team whose initial effort is devoted mostly to learning the uses and maintenance of instrumentation.

However, when the university's share of supporting basic research runs annually into the millions of dollars, cost sharing becomes an impossibility. Universities have become unable to muster the necessary funds from state appropriations, private endowments, tuition income or private gifts. Thus they are deprived of choice. Either the federal government assumes a larger burden, or the work quite simply cannot be afforded.

A rational solution is possible but it will be difficult to achieve. What it will require primarily is a fundamental readjustment of the traditional partnership in basic research between the federal government and the nation's 60 to 70 major research universities.

It would not be rational for the government to attempt to shift basic research away from the university community. For the government, any such effort would involve a multi-billion dollar investment in new facilities, to replace those which already exist at enormous expense on the major research universities. For the major research university it would spoil the loss of top talent, which presumably would move right along with the moving of federal funds.

An attempt by government to shift such training to non-university institutions devoted to basic research would achieve nothing less than the creation of a whole new set of academic institutions. One may also rule out as an alternative any substantial shift of the burden of supporting basic research to the private sector of the American economy.

While it would be part of any rational solution to expect private industry to play a greater role in the sponsorship of basic research, the total dollar volume involved simply rules out private industry as an alternative to federal sponsorship. The only thing that makes sense is for the federal government to continue to look to the major research universities for the bulk of the nation's basic research effort.

Such funding would have to be permanent and substantial, quite apart from the arguments about limits to government control that would impinge on academic integrity, or the need of universities to provide scrupulous accountability for the use of federal funds. In effect, the federal government would have to give explicit recognition to the obvious fact that a relatively small group of major research universities already constitute the resource base for most basic research, and need to be treated as such. Research institutions for this purpose. The really important factor would be durable federal commitment to assume the full burden of basic research for such prospective centres of university campuses, which explicitly means funding equivalent to endowment support in addition to capital grants.

This, of course, is not really a far-fetched notion. When the federal government awards grants for building construction or large-scale instrumentation, the effect is already that of a permanent commitment. What needs to be added is an equivalent permanent funding for the maintenance of the facility, the maintenance and replacement of equipment, and core operating personnel.

Whether this is best done in the long term by federal ownership of the facilities and equipment and a lease to the university, or by continued direct grants to the institutions is a subject for argument. Permanent findings for core personnel, however, is not likely to be handled effectively by stationing federal personnel on the campus. Here the traditional model of rotating fellowships—but permanent funding—to the institution to recruit and deploy the personnel seems to be the only viable approach. What is needed is recognition that training of young scientists cannot be separated from the conduct of basic research itself, and that a collapse is visible in the offing at the universities unless remedial action is taken without long delay.